THE EFFECTIVENESS OF A LEARNING STRATEGIES COURSE ON COLLEGE STUDENT-ATHLETES' AND NON-ATHLETES' ADJUSTMENT, ACADEMIC PERFORMANCE, AND RETENTION AFTER THE FIRST TWO YEARS OF COLLEGE

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This study replicated and extended previous research I had performed that suggested that a student success course is an effective intervention to assist student-athletes in the adjustment to college. Participants in the current study included 4 groups of students, including (1) non-athletes and (2) student-athletes who were mandated and enrolled in the student success course, and (3) non-athletes and (4) student-athletes who were not mandated and did not enroll in the student success course.

Overall, results from the current study suggested that the student success course was effective in helping non-athletes and student-athletes learn key cognitive strategies that are necessary for college success. In addition, results indicated that after taking the student success course, academically at-risk students earned equivalent grades, percentage of hours passed, and retention rates compared to their peers who were not classified as being academically underprepared. Finally, adjustment patterns of all groups were examined, with particular emphasis on the decrease in adjustment over the course of the semester that was demonstrated by the student-athletes. Intervention implications and future research directions are discussed, specifically in terms of how to address the unique needs of college freshmen student-athletes.

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CHAPTER 1

INTRODUCTION

Adjustment to College

During late adolescence and early adulthood, many developmental tasks must be confronted, such as establishing and developing relationships, becoming autonomous, achieving competence, and broadening one's horizons (Chickering, 1969). This time period, which traditionally coincides with the beginning of college, is also used to consolidate an identity and a mature sexuality, establish a set of values, and set career goals (Chickering, 1969; Farnsworth, 1966). Chickering (1969) proposed seven aspects of college student development. Specifically, college students must develop competence, become autonomous, manage emotions, establish an identity, develop interpersonal relationships, clarify purpose of their life, and develop integrity. New college students must adapt not only to these developmental challenges, but also to more demanding academic courses and more self-responsibility that is needed to complete coursework compared to high school.

Unfortunately, many students are not prepared for the social, personal, and academic changes, such as leaving and developing new social groups, living away from home, and assuming new responsibilities (Chartrand & Lent, 1987), that occur during college (Brooks & DuBois, 1995; Russell & Petrie, 1992). Thus, the first year of college is a critical period of adjustment (Chickering, 1969; Noel, Levitz, & Saluri, 1985; Upcraft & Gardner, 1989), and as a result, many students may drop out of school, particularly during their first year in college. In fact, Tinto (1987) reported that of students who leave college, 75% do so during or following the first semester, the time when most of the difficult transitions are experienced, and Liu and Liu (1999) noted that transfer students have a higher rate of continued enrollment than new

freshman. The criticalness of this time period is further supported by evidence that attrition decreases by almost 50% with each passing academic year (Levitz & Noel, 1989). Therefore, it seems that the first year of college, particularly, the first semester of college, is an important time to implement interventions that may assist new students' adjustment to college.

If students are able to adapt to the transition and stressors associated with coming to college, they will be more likely to succeed in the classroom (Howe & Perry, 1978; Nelson, Scott, & Bryan, 1984) and remain enrolled in college. One of the main goals of a university is to retain students. Consequently, student retention implies that the students are succeeding in college. Although a key indicator of success, retention should not be the only one considered in determining how well a student is doing in college (Tinto, 1975). In fact, success in college, or college adjustment, can take a variety of forms. Upcraft (1984) defined freshman success as making progress toward fulfillment of educational and personal goals. These goals, similar to Chickering's (1969) proposed aspects of college student development, include: developing academic and intellectual competence, establishing and maintaining interpersonal relationships, developing an identity, deciding on a career and lifestyle, maintaining personal health and wellness, and developing an integrated philosophy of life. Upcraft and Gardner (1989) maintained that these goals are common of all college freshmen, regardless of racial, gender, and age differences.

Chartrand (1992) defined college adjustment as institutional commitment, the absence of psychological disturbances, and adjusting to the rigors of academics. Astin (1985) proposed that the key to freshman success is involvement in the academic extracurricular life of the university, which can be enhanced by student interaction with faculty, staff, student affairs personnel, and other students (Upcraft & Gardner, 1989). Furthermore, Baker and Siryk (1984) saw college

adjustment as a multifaceted phenomenon that included components of academic adjustment, social adjustment, personal-emotional adjustment, institutional adjustment (Baker, McNeil, & Siryk, 1985), and overall general adjustment. Thus, to accurately measure college student success, researchers and academic administrators must take into account multiple factors including: academic performance (i.e., grade point averages), retention rates, graduation rates, social/personal adjustment, institutional affiliation, and emotional adjustment.

Factors such as academic boredom, students' perceptions that their classes are irrelevant to the world of work, limited or unrealistic expectations of college, academic unpreparedness, transition or adjustment difficulties, lack of certainty about a major or career, and incompatibility between the student and the institution may be more influential in student attrition compared to cognitive variables (Levitz & Noel, 1989). Thus, Levitz and Noel (1989) advocated that interventions aimed at improving the freshman experience, and subsequently leading to retention, should focus on helping the students adapt academically, socially, and personally. Specifically, interventions should help students connect to their new environment, work toward academic goals, make a successful transition to college, and succeed in the classroom (Levitz & Noel, 1989).

Some commonly used interventions to assist college freshman in adjusting to college are freshman orientation programs, brief counseling, study skills training, freshman academic advising, mentoring programs, health and wellness programs, and freshman seminars (Upcraft & Gardner, 1989). Freshman orientation programs, which are typically held in the summer months prior to enrollment generally provide students with information regarding facilities, programs, services, and opportunities to meet with faculty, staff members, and other students (Perigo & Upcraft, 1989). Orientation programs have been found to help retain students throughout their

freshman year (Beal & Noel, 1980; Ramist, 1981) and are effective in providing an indirect avenue for developing more social integration with the new college environment, a factor that is associated with stronger commitment to the institution and persistence (Pascarella, Terenzini, & Wolfe, 1986).

Counseling services also have been found to be effective in helping freshman succeed in college, in particular increasing retention rates (Bishop, 1986; Churchill & Iwai, 1981; Margolis, 1981; Scott & Williamson, 1986; Walsh, 1985). There are several ways that counseling can ease the transition to college. First, counseling can help students in their personal development, such as establishing effective interpersonal relationships and develop effective coping skills to deal with anxiety and stress (Rayman & Garis, 1989). Second, counseling can help students focus on their academic development, such as choosing coursework and recognizing and meeting their academic potential and expectations (Rayman & Garis, 1989). Finally, vocational counseling can assist students in exploring and clarifying career goals, interests, abilities, and life values, and make informed decisions that reflect this awareness (Rayman & Garis, 1989).

Because effective use of study skills has been found to be associated with college academic success (Allen, Lerner, Hinrichsen, 1972; Capella, Wagner, Kusmierz, 1982; Dendato & Diener, 1986; Lin and McKeachie, 1970; Kriner & Shriberg, 1992; Kulik, Kulik, & Shwalb, 1983; Petrie & Helmcamp, 1998), study skills training is another commonly used intervention. This intervention generally focuses on topics such as note-taking, test-taking, organizing information into meaningful frameworks, study techniques, memory strategies, and reading efficiency. Deficiencies in these areas may lead to poor academic performance, which is a common reason for student attrition (Astin, 1975; Beal & Noel, 1980). In addition, combining study skills training with brief counseling interventions such as cue-controlled desensitization

(Lent & Russell, 1978), cognitive/relaxation training (Dendato & Diener, 1986), and stress management training (Williams, Decker, & Libassi, 1983), has been found to be effective in reducing students' test anxiety, which may consequently improve academic performance.

Freshman academic advising also has been found to be a beneficial intervention. One aspect of this intervention is the development of an academic advisement profile, which includes high school academic records, college admission exam scores, course placement exam scores, transcripts, and any other pertinent information that may be beneficial in helping students plan their courses. Academic advisement profiles are used to schedule appropriate courses for a student's current academic ability level, connect the student's interest with the academic curriculum, and identify possible extracurricular activities (Kramer & Spencer, 1989). Academic advising profiles demonstrate to students how academic information can benefit them, encourage students' active participation in the advising process, and integrate campus services to meet the students' needs (Ender, Winston, & Miller, 1983; Hillman & Lewis, 1980; Kramer, Chynoweth, Jensen, & Taylor, 1987; Miller & McCaffrey, 1982; Walsh, 1979; Winston & Sandor, 1984). One of the key aspects of academic advising is that it provides the students an opportunity to be involved in planning their academic career (Kramer & Spencer, 1989), which Astin (1985) believes is necessary for greater student learning and development.

Health and wellness programs have been implemented in universities to provide students with valuable information regarding healthy behaviors and lifestyle choices (Leafgren, 1989). Hettler (1980) proposed six dimensions of wellness: emotional development, intellectual development, physical development, social development, occupational development, and spiritual development. Difficulties in any area will affect the other areas, diminishing overall well-being and contributing to attrition (Leafgren, 1989). For example, diminished physical

health may impede academic progress, thus affecting a student's intellectual and occupational development.

Although universities have implemented several interventions in an effort to assist new students in successfully adapting to college, many of these interventions are typically short in duration and do not last throughout the entire first semester, which is when many students may need assistance. At the beginning of their first semester in school, new college students may initially experience the "freshman myth," in which they overestimate their academic abilities and coping skills (Stern, 1966). After this period, students learn that their old coping habits and study habits are not effective enough to navigate the challenging university environment, and may feel disenchanted when their expectations of succeeding in college are not met (Stern, 1966). Thus, the brief contact of some interventions may not be the most effective way to serve the needs of new college students. Interventions that last for a longer duration, such as an entire semester, may be more useful in assisting students with the difficult task of adjusting to college.

One intervention that generally lasts an entire semester is a freshman seminar course. These courses have been found to be one of the most effective interventions to enhance freshman success (Upcraft & Gardner, 1989). Freshman seminars can provide students with information about the campus, promote campus involvement, enhance academic skills, and facilitate peer relationships (Upcraft & Gardner, 1989). There has been extensive empirical data supporting the effectiveness of freshman seminars, or student success courses, in assisting matriculants' adjustment to college (Behrman, Dark, & Paul, 1984; Chapman & Reed, 1987; Davis-Underwood & Lee, 1994; Dendato & Diener, 1986; Dunphy, Miller, Woodruff, & Nelson, 1987; Stupka, 1986, as cited in Fidler & Hunter, 1989; Howard & Jones, 2000; Kriner & Shriberg, 1992; Kulik et al, 1983; Maisto & Tammi, 1991; Patrick, Furlow, & Donovan, 1988; Robbins &

Smith, 1993; Schwitzer, McGovern, & Robbins, 1991; Upcraft, Finney, & Garland, 1984). Specifically, student success courses are effective in helping students get off academic probation (Coleman & Freeman, 1996), earn higher grade point averages (Coleman & Freedman, 1996; Cone & Owens, 1991; Davis-Underwood & Lee, 1994; Fidler & Hunter, 1989; Hopkins & Hahn, 1986, as cited in Fidler & Hunter, 1989; Stupka, 1986, as cited in Fidler & Hunter, 1989; Wilkie & Kuckuck, 1989), complete more semester units of study (Fidler & Hunter, 1989), have higher retention rates (Cartledge & Walls, 1986, as cited in Fidler & Hunter, 1989; Coleman & Freedman, 1996; Cone & Owens, 1991; Farr, Jones, & Samprone, 1986, as cited in Fidler & Hunter, 1989; Fidler & Hunter, 1989; Polansky et al., 1993), increase their contact with faculty (Davis-Underwood & Lee, 1994; Woodward, 1982, as cited in Fidler & Hunter, 1989), report increased knowledge and use of student services (Banziger, 1986, as cited in Fidler & Hunter, 1989; Cartledge & Walls, 1986, as cited in Fidler & Hunter, 1989; Fidler, 1986, as cited in Fidler & Hunter, 1989; Kramer & White, 1982, as cited in Fidler & Hunter, 1989; Potter & McNairy, 1983, as cited in Fidler & Hunter, 1989), and ultimately graduate (Shanley & Witten, 1990). In addition to being effective, student success courses are an economical and practical intervention to assist students in succeeding in college (Petrie & Helmcamp, 1998).

Freshman seminar courses are effective because they introduce students to essential study and life skills that will assist them in becoming better acquainted with university facilities and services (Petrie & Helmcamp, 1998). They also help because they provide an avenue for integrating students into the social aspects of college, which has been found to be positively related to freshman success (Terenzini & Pascarella, 1977; Tinto, 1987). Freshman success courses often put students in close contact with vital campus services, such as financial aid, counseling, and career development (Fidler & Hunter, 1989). Through these contacts, freshman

seminars help students increase their knowledge about the university, provide an avenue for social support, and enhance social adjustment (Schwitzer et al., 1991).

Although the exact content of freshman seminar courses may vary across institutions (Gordon & Grites, 1984), the intent of these courses is to help students adjust to the demands of college by teaching study skills, life skills, and providing opportunities for students to make meaningful connections with instructors, other students, and the university. For example, covered topics may include study skills training, stress and coping, self-regulation, goal-setting, and healthy behaviors. The smaller classes generally associated with freshman seminar courses provide students with an important opportunity to make personal connections with classmates and instructors, which can provide vital support as the student adjusts to college life (Pantages & Creedon, 1978; Petrie & Helmcamp, 1998). Pascarella (1984) noted that easy access to faculty and instructors may increase a student's academic aspirations, and interactions with peers and faculty may lead to positive academic experiences (Russell & Petrie, 1992; Tinto, 1975).

Schwitzer et al. (1991) suggested that a 1-credit learning strategies course could enhance academic and social adjustment of freshman students. The 10-week course included lectures on topics such as the purpose of an undergraduate education, professor interactions, career planning, and university resources by providing information about the demands of college and a socially supportive environment. A significant difference between pre and post-test measures of social adjustment was found, indicating that participating in the course led to better social adjustment. Furthermore, freshman students who took the course reported a high level of perceived social support and increased knowledge of university resources. Perhaps most importantly, all students were in good academic standing and remained enrolled in the following semester after participating in this course.

Students who performed poorly in high school or scored low on college admission entrance exam scores may be at a higher risk of experiencing difficulties during the transition to college because they may be the least adequately prepared of entering college freshman to handle the demands of college (Francis, McDaniel, & Doyle, 1987; Howard & Jones, 2000; Rice, 1984, as cited in Fidler & Hunter, 1989). For example, Howard and Jones (2000) examined whether students who had previously demonstrated academic deficiencies, such as a low high school GPA, would benefit most from a student success course. Specifically, they looked at how a 2-credit hour, elective freshman seminar could enhance perceptions of being prepared for the university experience, satisfaction of chosen major, confidence as a student, study skills competence, and campus resource knowledge from the beginning to the end of the semester. To compare levels of previous academic performance, the authors divided their participants, all of whom took the same class, into groups based on high school GPA, with the low group being those students whose high school GPA was lower than a 3.0 on a 4.0 scale, the medium group including those students whose GPA was between a 3.0 and a 3.49, and the high group being comprised of students whose high school GPA was at or above a 3.5. They found that overall confidence, knowledge of campus resources, and perception of college preparedness increased equally for all of the groups across semester. There was no change in progression toward development of a major. Howard and Jones (2000) hypothesized that the seminar would be especially helpful for less prepared students, but this idea was supported only for study skills, in which the low group made the greatest gains in efficiency over the course of the semester.

Petrie and Helmcamp (1998) examined the effectiveness of an academic and personal effectiveness course in helping students develop strategies to become more effective learners and adjust to the increase in academic demands of college. During the first and last week of the 12-

week course, participants completed the Cognitive Skills Inventory (CSI; Moreno & DiVesta, 1991), which has four measures of students self-reported cognitive functioning and study habits that are related to academic success in college: Integration (degree to which students integrate or organize incoming information in meaningful frameworks and relate this information to prior knowledge, Repetition (degree to which students use behaviors designed to increase ability to retain information in memory), Comprehension (students' ability to know when something is understood/learned), and Coping (degree to which students become anxious about or distracted in studying or test-taking). Results from two separate semesters indicated that students reported more frequently organizing new information in meaningful ways and using techniques to increase retention, and less anxiety and fewer distractions when studying or taking exams (Petrie & Helmcamp, 1998). These results suggest that a student success course intervention is effective in improving the academic performance of under-prepared students. Although Petrie and Helmcamp (1998), Schwitzer et al. (1991), and Howard and Jones (2000) provided some support for the helpfulness of a student success course, the studies did not use a control group of participants. To truly determine the effectiveness of a student success course, a control group of non-participants is necessary (Petrie & Helmcamp, 1998; Schwitzer et al., 1991).

Studies that compared a control group of students who did not participate in a freshman seminar found that freshman seminar participants had higher grade point averages (Hopkins & Hahn, 1986,as cited in Fidler & Hunter, 1989; Maisto & Tammi, 1991; Stupka, 1986, as cited in Fidler & Hunter, 1989), had higher retention rates (Farr, Jones, & Samprone, 1986, as cited in Fidler & Hunter, 1989; Stupka, 1986, as cited in Fidler & Hunter, 1989), completed more hours of study (Stupka, 1986, as cited in Fidler & Hunter, 1989), reported being more knowledgeable about campus services (Banziger, 1986, as cited in Fidler & Hunter, 1989), and reported

increased contact with faculty (Maisto & Tammi, 1991; Woodward, 1982, as cited in Fidler & Hunter, 1989). For example, Maisto and Tammi (1991) examined the effectiveness of a freshman seminar course by comparing (a) prospectively a control and experimental group who were matched on self-predicted grade point average, and (b) retrospectively, upperclassmen who had taken the course were compared to upperclassmen who had not enrolled in the course. The goals of the course were to teach necessary study skills, orient students to university resources, increase freshman involvement in university life, and assist students in developing a positive attitude toward learning. The authors believed that meeting these goals would lead to improved grades and better social integration, defined by informal interactions with faculty members, participation in extracurricular activities, and self-ratings on an adjective rating scale. Maisto and Tammi (1991) found that freshman seminar participants, both first-years and upperclassmen, reported more informal contacts with faculty members and achieved a higher grade point average after the first semester compared to nonseminar participants. There were not any significant differences in regard to the students' academic and social integration. The authors hypothesized that the lack of differences in integration levels may be due to when the ratings were obtained. If ratings had been taken at the end, instead of the middle, of the semester, differences may have emerged.

Maisto and Tammi's (1991) study demonstrated short-term effects of participating in a study skills course, but to truly determine the helpfulness of this type of intervention it is important to look at its long term effects. Data regarding the effectiveness of a freshman seminar course on retention rates has been collected since 1972 at the University of South Carolina. Fidler and Hunter (1989) reported that for fourteen consecutive years, students who participated in the freshman seminar course had a higher retention rate for the sophomore year than students

who did not participate in the course, and these differences were statistically different for ten of the fourteen years. However, the grade point averages between the two groups had not differed.

In another longitudinal study, Wilkie and Kuckuck (1989) conducted a 3-year study to determine the effectiveness of a freshman seminar course. The authors hypothesized that students who participated in the course would have higher cumulative grade point averages and retention rates than students who did not participate in the course. Students whose first-year predicted grade point averages were less than a 1.50 were randomly assigned to register or not register for the course. All students were new to the university that fall. The course was a 3-credit elective course that focused on learning skills, college, personal, and social adjustment, and career exploration. The content of the course included topics such as study skills (i.e., time management, test-taking, note-taking, learning principles), academic policies, interpersonal skills and communication, and career assessment and job skills. Although the predicted mean GPA's of the groups were equal at the beginning of the study, results indicated that the students who successfully passed the freshman seminar course achieved higher cumulative grade point averages after 1 semester, 1 year, 2 years, and 3 years, compared to the students who did not participate in the course. The students who participated in the freshman seminar course also demonstrated higher retention rates, although the differences did not reach significant levels. The results of this study are interesting in that these "high-risk" students were tracked for a majority of their college career. These students were labeled as high risk based on predicted first-year grade point average, however, the authors did not specify what criteria were used to make this prediction. Wilkie and Kuckuck (1989) also noted that some students were resistant to the course as a result of being required to enroll, and failed to attend class resulting in a failing

grade. Thus, the authors suggested that this course be either voluntary or mandated for all students in a target population.

Both Maisto and Tammi (1991) and Wilkie and Kuckuck (1989) used self-predicted grade point average as their indication of prior academic ability, however, it is not clear how these predicted grade point averages were made. Furthermore, high school grades and college admission test scores are the strongest predictors of college GPA (Mathiasen, 1984; Neely, 1977). Using high school GPA and college admission test scores, it is easy to flag those students who may be academically underprepared. Even though these students may be aware of their academic deficiencies, they still may be reluctant to enroll in a student success course because they often overestimate their abilities during the first semester of college. Because under prepared students may not take the initiative to enroll in a learning strategies course or may lack the self-awareness to recognize their need for assistance, mandating those students who do not meet certain academic requirements may be the best course of action.

Overall, research findings suggest that student success courses are effective in easing the transition to college. However, there are limitations to many of these studies. First, studies often fail to measure both academic and social factors as predictors and/or outcomes, even though both are deemed as important components in the definition of college success (Russell & Petrie, 1992). Using multiple outcomes, such as GPA, retention, development of learning strategies, and adjustment, would be most appropriate. Second, many studies that examine the effectiveness of a study skills course lack an appropriate control group. To determine whether a student success course is beneficial, the students who are enrolled in the course should be compared to students with similar academic backgrounds (i.e., admission test scores and high school GPA) who are not enrolled. Comparing a group of academically underprepared students

who are enrolled in and pass a student success course with a group of students who are also academically underprepared and do not take the course will provide data on the effectiveness of the course, rather than data on what may just be a function of time or simply being in college. Finally, many studies fail to measure long-term effects of an intervention. The ultimate goal of most universities is to graduate its students. Therefore, studies should examine students' academic progress throughout their entire academic career, including through graduation, to evaluate the effectiveness of an intervention.

Student-Athlete College Adjustment

In order to fully understand student-athlete college adjustment, it is imperative to identify the unique set of demands that college student-athletes must face. College student-athletes face the challenges of a typical college student, such as consolidating an identity and a mature sexuality, establishing a set of values, and setting career goals, yet they also handle other stressors that are specific to the student-athlete experience, such as balancing academic and athletic interests, attending to their physical health and performance, and terminating their athletic career (Parham, 1993). In addition, college student-athletes are forced to confront these challenges in the presence of immense public scrutiny, limited time, and often a lack of necessary and available resources (Gabbard & Halischak, 1993).

Howard (1993) argued that a student athlete should remain a student first, and an athlete second, yet he recognized that there were a number of reasons that this does not occur. First, athletes must live up both coaches' and professors' expectations. In addition, the National Collegiate Athlete Association (NCAA) is a governing body that oversees student athletes' academic progress and eligibility. Specifically, athletes are required to maintain a minimum grade point average each semester and declare an academic major by their third academic year in order to remain eligible. In

addition to declaring a major, the athlete must also pass a certain percentage of classes within that major to maintain eligibility (http://www.shsu.edu/~ath_www/pdf/studenthandbookbb.pdf). Second, although, there are NCAA rules regulating the amount of time that student-athletes are allowed to practice, there are many hours of "voluntary" practices and workouts, such as weights and conditioning, film watching, and meetings. Typically, athletes are expected to participate in these extra hours in order to ensure playing time and avoid repercussions from a coaching staff that feels extra practice is necessary (Howard, 1993). Thus, participation in these "voluntary" hours may interfere with the student-athletes' other obligations, such as academics, family, and friends. Third, competitions, and even practices, are often viewed by coaches, and the athletes themselves, as more important than academics. Student-athletes often miss class because of sport commitment, yet would be highly reticent to miss a competition or practice for an academic responsibility. These time demands may result in student-athletes feeling conflicted over their role as an athlete versus their role as a student (Howard, 1993). Student-athletes may feel obligated to fulfill their role as a scholarship athlete, including attending all practices and competitions, yet in doing so be perceived as neglecting their academic responsibilities. In fact, faculty members may view student-athletes in a negative light, and perceive them as less academically competent because they are athletes (Engstrom, Sedlacek, & McEwen, 1995). Finally, as athletes transition to a higher level of competition, such as collegiate sport, their focus must narrow in order to adapt to higher athletic demands (Pearson & Petitpas, 1990), potentially causing athletes to focus more energy on athletic success than academic success. Because of these multiple competing demands and role conflict, athletes may be at risk for poor academic performance.

Universities are not blind to the notion that student-athletes may be considered a "high-risk" population in terms of college adjustment. In fact, Berg (1989) reported that a former

president at the University of Iowa, Hunter R. Rawlings III, threatened to prohibit student-athletes from competing their freshman year. Rawlings argued that freshmen are ill-prepared to contend with the dual challenges of higher expectations for athletic performance and more rigorous academic demands (Berg, 1989). Rawlings proposed that a year of ineligibility would provide incoming student-athletes the opportunity to adjust to the transition of college before they were expected to adjust to the transition to a higher caliber of athletic performance. Although this rule was never implemented, universities are beginning to recognize their obligation to provide academic support programs for their student-athletes during this difficult first year in college (Berg, 1989).

One study (Albitz, 2001) examined the effectiveness of a student-athlete college success course on retention and student-athletes' goals to remain in college. Participants included all new first-year student-athletes at a small Midwestern university, and were compared to a control group of new first-year students at the university who were not enrolled in a student-success course in regard to retention and intent to remain in college after the first semester. The course was a 1-credit pass/fail seminar designed to improve one-year retention rates and college success of incoming student-athletes. Topics included time management, goal-setting, library resources, nutrition, career development, stress management, study skills, university history, resume writing, note-taking, and test-taking. The course was structured to encourage frequent interactions among the students and with the instructor. There was no difference between the groups in terms of retention rates; however, the student-athletes who participated in the course reported that the course influenced their goal to remain in college and graduate.

Albitz's (2001) study did not support previous evidence that a student success course will have a positive influence on college retention; however, retention rates were measured after only

one year. Because student-athletes have eligibility rules that guide their enrollment and academic status, student-athletes may not be as vulnerable to leaving school after their first semester or year. Therefore, other variables, such as academic performance and adjustment may be most indicative of student-athlete college success after their first semester of college.

Interventions Aimed at the Student-Athlete Population

Historically, interventions with student-athletes have focused primarily on performance enhancement, rather than the student-athlete's well being (Gould, Tammen, Murphy, & May, 1989). However, interest concerning the overall well being of student-athletes has sparked interventions, particularly at the college level, aimed at the athlete's overall development (Gould & Finch, 1991). University athletes have access to services that are available to all students, such as orientation programs, counseling, and tutoring. However, student-athletes may underutilize student development services and counseling when compared to other students (Ferrante & Etzel, 2002; Pinkerton, Hinz, & Barrow, 1989). Ferrante and Etzel (2002) argued that the high visibility of many student-athletes and time limitations may contribute to them ignoring campus support services. In addition, student-athletes may perceive the athletic setting as a closed environment, which may lead them to inadvertently ignore campus services outside of the athletic department (Ferrante & Etzel, 2002). The reality, however, is that academic counselors in athletic departments spend most of their time on academic advising related issues (Brooks, Etzel, & Ostrow, 1987), leaving little time for the social, personal, and developmental concerns of student-athletes (Ferrante & Etzel, 2002).

Fortunately, support programs for student-athletes are becoming increasingly popular (Green & Denson, 1993) and offer services, such as academic monitoring and advising, personal counseling, and various workshops on topics such as career planning and time management to

help student-athletes (Denson, 1995). These support programs are formulated with the implicit understanding that student-athletes are often less academically prepared, but face greater pressures (e.g., time and energy restraints) compared to their non-athlete cohorts (Denson, 1995). Denson (1995) suggested that interventions aimed at student-athletes must be done from a holistic perspective that encompasses all domains of a student-athlete's experience, including personal, academic, and career. Focusing on only one aspect of a student's development ignores the reality that difficulties in one area will undoubtedly cause problems in others.

Young and Sowa (1992) suggested that support services with the purpose of easing the transition to college for student-athletes are effective during the first semester, particularly for African-American student-athletes. For example, practical skills sessions, such as goal-setting and understanding racism, may be beneficial in predicting student-athlete academic success (Young & Sowa, 1992). The National Collegiate Athletic Association has also deemed these support services as valuable and allocated funds to support them at universities and colleges (Denson, 1995). In fact, the NCAA (http://www1.ncaa.org/eprise/main/membership/ed_outreach/champs-life_skills/program.html) has implemented and funded the CHAMPS/Life Skills (Challenging Athletes' Minds for Personal Success) program to support institutions in enhancing the quality of the student-athlete's experience. The CHAMPS/Life Skills Program has several goals, including: (a) assisting in achieving academic excellence by promoting intellectual development, (b) promoting athletic excellence, (c) supporting the development of a well-balanced lifestyle by encouraging emotional well-being, personal growth, and decision-making skills, (d) encouraging the development and pursuit of career and life goals, (e) supporting and encouraging making meaningful contributions to their communities, (f) promoting ownership of personal, academic,

athletic and social responsibilities, and (e) assisting student-athletes in transferring athletic skills into skills that will lead to success in life. The NCAA reported that as of August 2007, 581 institutions were participating in the CHAMPS/Life-Skills program.

The CHAMPS/Life Skills program is a structured program that is implemented in similar ways at participating universities; however, some schools are also developing their own program to assist student-athletes. A psychoeducational model, Life Development Intervention (LDI; Danish & D'Augelli, 1983), is used at one university. The primary goal of the LDI is to enhance competence through life skills, including teaching how to set appropriate goals (Danish, Petitpas, & Hale, 1993). Other enhancement strategies include training on how to anticipate possible life events, such as career termination, and recognizing and transferring sport skills to other domains, such as performing under pressure and accepting criticism and feedback in order to learn (Danish et al., 1993). Athletes may believe that they lack the skills necessary to succeed off of the playing field; however, it may be more accurate to say that they are not aware of the skills they possess and how to transfer these skills to other domains (Danish et al., 1993).

A similar program to the LDI is in effect at the University of Notre Dame. This program has several interventions, such as study skills programs, time management workshops, stress management workshops, and conflict management workshops aimed at first-year student-athletes and high-risk student-athletes, such as those who have demonstrated academic deficiencies (i.e., low high school GPA or college admission test scores). In addition, several programs are aimed at current student-athletes, such as career development programs, drug-testing consultation, and team consultations (Gabbard & Halishak, 1993). Another intervention that was formulated specifically for college student-athletes is the Student Services for Athletes (Jordan & Denson, 1990). The purpose of this program was to assist incoming students in adjusting to the demands

of being a college-athlete and reaching their fullest potential in other areas, such as academic and personal success. Specifically, the program helped student-athletes become acquainted with the university's academic and social environment, develop academic skills, and develop realistic life plans after their sport participation is over, depending on the student-athlete's current developmental needs and concerns (Denson, 1995). For example, the incoming freshman student-athlete may need more assistance with facing academic challenges and fitting into a new environment, whereas the senior student-athlete may need more assistance with career planning and dealing with retirement when their eligibility expires (Denson, 1995). Denson (1992) emphasized that this sensitivity to unique developmental transitions is imperative to ensure that adequate services are being provided. In addition, he suggested that this developmental philosophy be applied to recognize the changing needs of student-athletes as they progress through their athletic careers, as well as to encourage the student-athlete's growing ability to manage university life over time. It is important that student-athletes begin to develop responsibility and initiative in interacting with university personnel who will provide them with necessary services (Jordan & Denson, 1990).

The core components of the SSA program are similar to the ones found in many student-athlete support services, such as academic monitoring and planning, personal counseling, programs and workshops, and consultations (Green & Denson, 1993). In addition, the SSA has developed several programs and workshops for its student-athletes, such as a freshman orientation, time-management and study skills, nutrition and eating disorders, rape awareness, and career development. Denson (1995) reported that in the 1994-1995 school year, approximately 2,800 contacts were made with student-athletes, and of these contacts, 60% concerned academic issues, 15% personal counseling issues, and 5% concerning career or choice

of major issues. Furthermore, Denson (1995) noted that the largest percentage (40%) of contacts occurred in the fall, coinciding with the notion that the first semester of college may be the ideal time to intervene.

One part of the SSA program includes teaching a student success course for student-athletes (Denson, 1995). The SSA has 2 staff members who teach sections of a Freshman Seminar course that is offered through the College of Health, Physical Education, and Recreations (Denson, 1994). The course is based on the topics of academic navigation (i.e., time management, study skills, test-taking, registration, and library resources), career development (i.e., self-assessments, instructions on developing a resume), and personal/social issues (i.e. relationships, rape, cultural diversity, racism, sexism, nutrition, and eating disorders), but the topics are modified to encompass the student-athlete experience. For example, a lesson on time management might discuss time management while on athletic trips and how to plan ahead in order to complete assignments before games and trips. Student-athletes know the importance of being on time and completing deadlines because they are forced to do so every day in attending practice, weight training, and team meetings. However, they may not be as adept at making their academic work, such as completing assignments on time and keeping up with class readings, which they may perceive as less interesting, a priority (Pinkney, 1995).

A section on career development could also be an opportunity for student-athletes to explore and discuss options other than athletics. Because of student-athletes' competing academic and athletic demands, they may not be exploring or pursuing other areas of their lives, such as career development. College athletes often do not pursue other interests, and thus are particularly susceptible to identity foreclosure (Danish et al., 1993), which is a premature commitment to an activity or life path without adequate exploration of one's values and needs

(Marcia, 1996). The reality, though, is that only 1% to 2% of college athletes will play at the professional level (Sailes, 1996). Thus, when faced with retirement from sport, many college-athletes are not prepared because they may not have committed to being successful in academics or other career opportunities (Danish et al., 1993). Denson (1994) reported that the course has received favorable evaluations, however, no actual research concerning the program's effectiveness has been conducted.

Accountability of these programs is imperative to ensure effectiveness (Denson, 1995), however there are no empirical data on the effectiveness of the CHAMPS/Life Skills program, the LDI, or the SSA. Surveys, exit interviews, student-athlete advisory boards, and documentation of contacts are common practices, however, empirical data is necessary to examine the effectives of such interventions (Denson, 1995). As discussed before, these services are becoming more commonplace, particularly in NCAA Division I institutions, however, there has not been extensive research to support the effectiveness of these programs.

In a recent study, Tebbe and Petrie (2006) examined the effectiveness of a college student-athlete learning strategies course (PSYC 1000) in improving their academic performance, adjustment, and reported use of study strategies. Participants included all first-year student athletes from the fall 2003 and fall 2004 academic years. Eighty-six of the participants were mandated to take PSYC 1000 based on the university admission criteria (i.e. high school rank and college admission exam scores); 43 participants entered the university at the same time, but were not required to take the course. Student-athletes completed the Student Adaptation to College Questionnaire during the 4th and 12th week of the semester, and the Learning and Study Strategies Inventory during the 2nd or 3rd week and the 12th week of classes. Academic data were obtained from the university.

Results indicated that although the student-athletes who were mandated to take the PSYC 1000 course were academically "at-risk," (i.e., had significantly lower SAT scores upon admission to the university compared to student-athletes who were not mandated to take the course), they earned equivalent GPA's during their first and second semesters of college compared to their non-mandated cohorts. This finding is consistent with previous research (Howard & Jones, 2000), which suggests that learning strategies course are particularly useful in helping underprepared students overcome their academic deficiencies.

Over the course of the semester, the student-athletes who took the course reported improvements in their ability to manage anxiety, concentrate and focus their attention, comprehend new material, successfully apply test-taking strategies, accurately determine important concepts when studying, and manage the multiple time demands of being a college student-athlete. These improvements were expected given the nature of the curriculum, particularly in regard to developing the learning strategies that are necessary to succeed in college.

The student-athletes' motivation at Week 12 significantly predicted first and second semester GPA. That is, the student-athletes' motivation to accept the responsibility it takes to succeed in college was particularly important, suggesting that any intervention aimed at improving academic motivation may be useful. In fact, Simons, Rheenan, and Covington (1999) noted that the dual roles of college student-athletes often led to high motivation toward athletics, at the expense of motivation in academics. The idea that athletes' motivation may be the most important contributor to their academic performance underscores the importance of developing interventions aimed at improving athletes' overall well-being, rather than focusing solely on their athletic performance.

The student-athletes who took the course reported lower social and academic adjustment over the course of the semester, better personal/emotional adjustment, and no change in institutional attachment. Stern (1966) proposed the notion that first year college students often experience the "freshman myth," in which they overestimate their coping abilities and academic skills. Thus, the student-athletes' reported adjustment at Week 4 may have been inflated because they had not yet been tested by the rigors of higher education and believed their coping was adequate. Reported scores at Week 12 may have been a more accurate depiction of adjustment because of its time in the semester and the experiences students would have had by then. Therefore, future research should attempt to discern when the most accurate assessment of adjustment might be, by taking multiple assessments across the semester and relating each of these to their academic performance.

Summary and Conclusions

Because universities recruit educationally under prepared student-athletes, athletic departments have a moral responsibility to provide services, such as student-athlete freshman seminars, that will enhance the student-athletes' opportunities to succeed academically (Whitner & Myers, 2002). Not only will such services assist student-athletes in maintaining athletic eligibility, but they also will help the individuals achieve their maximum potential and contribute to society at large (Whitner & Myers, 2002). One possible intervention is a student success course that is tailored to meet the needs of a student-athlete population. Research on the effectiveness of student success courses for the general student population, particularly for academically underprepared students, suggests that these courses are effective in assisting students learn how to adapt to the demands of college (Behrman et al., 1984; Chapman & Reed, 1987; Davis-Underwood & Lee, 1994; Dendato & Diener, 1986; Dunphy et al., 1987; Stupka,

1986, as cited in Fidler & Hunter, 1989; Howard & Jones, 2000; Kriner & Shriberg, 1992; Kulik et al.1983; Maisto & Tammi, 1991; Patrick et al., 1988; Petrie & Helmcamp, 1998; Robbins & Smith, 1993; Schwitzer et al., 1991; Upcraft et al., 1984). However, there is little research providing empirical support for the effectiveness of tailoring these courses for the student-athlete population. Furthermore, many of the studies examining the effectiveness of a freshman seminar have failed to define success from multiple perspectives and consider the long-term benefits of participation. Thus, the purpose of the present study is to determine if enrolling in and passing a student success course will improve the study strategies, academic performance, retention, and adjustment of college of student-athletes.

The student-athlete PSYC 1000 course was based on the same syllabus and lesson plans as the PSYC 1000 course that certain nonathlete students at the University of North Texas are mandated to take based on their high school rank, high school GPA, college admission exam scores, and GPA from any transfer courses. However, the lesson plans were tailored to student-athletes and non-athlete students were prohibited from taking the course. Thus, the PSYC 1000 student-athlete section was targeted not only to the subgroup of academically underprepared students, but further refined to target the unique population of student-athletes. The benefit of having only student-athletes in the course is that the lectures can be tailored to encompass their experiences, with the intent of providing useful strategies to assist them in maximizing the chances of academic and personal success. Research suggests that limited contact with nonathlete students may detrimental to a student-athlete's academic progress (Adler & Adler, 1995), however, it seems unlikely that one class tailored to the specific needs of student-athletes along with concurrent classes with traditional, nonathlete students would hinder their academic performance. The course was taught by two teaching fellows who had been hired through the

psychology department, and had previously taught the PSYC 1000 course for the non-athlete students.

The major purpose of this study was to replicate and extend Tebbe and Petrie's previous research. First, data from 3 groups were compared to examine the effectiveness of a learning strategies course on freshmen student-athletes' academic performance, reported use of study strategies, and adjustment after one, two, and four semesters of college. Two groups were comprised of students who were mandated to enroll in PSYC 1000 based on university admission criteria. Of these 2 groups, one group was all student-athletes who enrolled in the student-athlete PSYC 1000 course, and one group will be nonathlete students who enrolled in a PSYC 1000 course. The third group will served as a control group, and was comprised of first-year students who were not mandated to enroll, and did not take a PSYC 1000 course. Thus, if there were differences between the student-athlete group and non-mandated group (regular students), the mandated, regular PSYC 1000 group would serve as a bridge group to examine whether the differences are related to the groups being comprised of athletes versus non-athletes. Although demographic variables, such as gender, race/ethnicity, sport, and academic variables (i.e. admission test scores, high school GPA) were examined, the purpose of this study was not to determine what predicts student-athlete academic success or lack of success, but rather how can those student-athletes who are under prepared for college be assisted in achieving academic success and adjustment through their participation in a course. An addition to this study compared to Tebbe and Petrie's (2006 research, was collecting adjustment data multiple times across the semester.

Hypotheses

Based on previous data supporting the effectiveness of student success courses, it was predicted that:

1. Both student-athletes and non-athletes who enrolled in and passed the PSYC 1000 Learning Strategies course would earn equivalent GPA's after the first, second, third, and fourth semesters of college as their nonmandated cohorts who did not enroll in the class.
2. Student-athletes and non-athletes who enrolled in and passed the PSYC 1000 Learning Strategies course would not differ in enrollment status or percentage of hours passed compared to their nonmandated cohorts who did not enroll in the class. That is, retention and successful completion of courses would be the same for all groups after the first, second, third, and fourth semesters of college.
3. All participants would report a decrease in adjustment over the course of the first semester. However, this decrease would be significantly less in student-athletes and non-athletes who enrolled in and passed the PSYC 1000 Learning Strategies course compared to students who did not enroll in the course.
4. Student-athletes and non-athletes who enrolled in and passed the PSYC 1000 Learning Strategies course would improve their use and understanding of effective study strategies over the course of the first semester, particularly in areas that are emphasized in the course curriculum (i.e., test-taking strategies, time management, information processing, concentration, study aids, and selecting main ideas).
5. Students who were not enrolled in PSYC 1000 would not report any differences in use of effective study strategies over the course of the first semester.

6. Previous academic performance (i.e. SAT scores, HS percentile rank), academic adjustment at Week 12, and motivation at Week 12 would be significant predictors of academic performance for all participants after the first, second, third, and fourth semesters of college.

CHAPTER 2

METHOD

Participants

Participants consisted of 160 first-semester freshmen (86 females, 75 males) from the University of North Texas.

Groups included:

1. fall 2005 freshmen who were mandated to take PSYC 1000, and enrolled in the regular course ($N = 53$)
2. fall 2005 freshman who were not mandated to take PSYC 1000, and did not enroll in the course ($N = 38$)
3. fall 2005 freshmen student-athletes who were mandated to take PSYC 1000 and enrolled in the student-athlete PSYC 1000 course ($N = 37$)
4. fall 2005 freshmen student-athletes who were not mandated to take PSYC 1000 and did not take the course ($N = 29$)

The mean age of participants was 18.16 years old ($SD = .64$). The race/ethnicity breakdown was: 59% Caucasian, 28% African-American, 3% Asian, and 7% Hispanic.

Instruments

Demographics

A demographic questionnaire (DQ) was developed to obtain information regarding age, gender, racial/ethnic group, and sport where appropriate.

Academic Performance

Students' previous academic performance (Scholastic Aptitude Test [SAT] scores or Admission to College Test [ACT] scores converted to [SAT] score, high school percentile rank)

and semester college grade point averages (GPA's) for fall and spring semesters during their first two years were used as measures of academic performance. Percentage of hours passed each semester and enrollment status also were also obtained from the university registrar system.

Learning and Study Strategies

The 77-item Learning and Study Strategies Inventory (LASSI, Weinstein, 1987) assesses students' use of 10 different learning and study strategies and methods, including: attitude (8 items; general attitude and motivation about being successful in school and in implementing the necessary behaviors/strategies to be successful), motivation (8 items; motivation and acceptance of responsibility for performing the specific tasks associated with academic success), time management (8 items; ability to balance the many competing demands of college), anxiety (8 items; how tense/anxious students are when approaching their academic tasks), concentration (8 items; ability to concentrate and direct attention to school and studying), information processing (8 items; students use of deep level processing skills to facilitate understanding, storage and recall), selecting main ideas (5 items; ability to identify important material that needs additional study/attention), study aids (8 items; ability to develop and use study aids that support learning, retention, and recall), self-testing (8 items; use of self-monitoring and self-testing of material), and test strategies (8 items; ' knowledge and use of effective test preparation and test-taking strategies.

Participants responded to each item on a 5-point Likert scale according to how well the statement described them, ranging from 1, *not at all typical* to 5, *very much typical*. Total scores for each subscale were obtained by reverse scoring the appropriate items and then summing across the items; scores are then converted to T-scores. Higher scores indicate better study strategies in that particular area, though a high score on the anxiety subscale indicates high

anxiety management. Scores were then transformed into percentile ranks so the student can determine how well he or she did compared to the norm groups. Internal consistency reliabilities for the LASSI have ranged from .68 (study aids) to .86 (time management) and test-retest coefficients (3-4 week interval) range from .72 (information processing) to .85 (time management and concentration) (Weinstein, 1987).

Adjustment to College

The 67-item Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989) measures individuals' perceived academic adjustment (24 items; how well students manage educational demands of college), social adjustment (20 items; how well students deal with interpersonal experiences at the university), personal-emotional adjustment (15 items; what extent the student is experiencing psychological distress), and institutional attachment (15 items; degree to which the student feels affiliation toward the college). Participants rated each item on a 9-point scale, ranging from 1, *applies very closely to me*, to 9, *does not apply to me at all*. Total scores were obtained for each subscale by summing across the appropriate items, and then translating to T scores. Higher scores indicate better adjustment.

High internal consistency reliabilities were found for all scales and all have been shown to be useful in predicting attrition (Baker & Siryk, 1989). In particular, the institutional attachment subscale and academic adjustment have been found to be related to retention and academic performance, respectively. A detailed summary of the SACQ research suggests that this instrument is a valid and reliable measure of college student development (Baker & Siryk, 1989).

Learning Strategies Course

The learning strategies course (PSYC 1000) was based on psychological and educational theories and models associated with learning, self-regulation, personal and career development, communication, stress and coping, and health. The overall goals of the course were to assist students in developing effective strategies to be proficient learners, to increase their understanding of how people change and develop, and to apply this knowledge across academic programs and in all areas of their lives to make positive, self-enhancing changes. Specifically, students were introduced to study strategies (e.g., note taking, effective reading) and self-regulatory skills (e.g., time management, goal-setting), and given the opportunity to learn more about themselves in relationships, in careers/majors, with respect to health-related behaviors, and in stress and coping. Assessments on personality (i.e., Myers-Briggs Type Indicator), career interests (i.e., Self-Directed Search), multiple intelligences, learning strategies (i.e., Learning and Study Strategies Inventory), and learning styles were used to help students determine their strengths and weaknesses and then individualize their learning and adoption of the strategies taught.

The student-athlete PSYC 1000 course was based on the same syllabus and curriculum that are used in other PSYC 1000 sections for non-athletes; however, the lesson plans were tailored to address the specific demands of the student-athlete experience. For example, the lesson on time management included strategies on how to study while traveling for sport and the section on healthy lifestyle choices included information on how to make better nutritional choices to provide needed fuel for athletic performance. These changes were made to make the course more personally meaningful for the student-athletes, which ideally would improve their comprehension and adoption of new strategies learned.

Procedures

In fall 2005, participants in the student-athlete PSYC 1000 course, regular PSYC 1000 course, as well as freshmen who were not mandated, and not enrolled in the PSYC 1000 course completed consent forms, demographic questionnaires, and took the SACQ in the 4th, 8th, and 12th week of classes, and the LASSI during the 4th and 12th week. The LASSI was not given during the 8th week of classes because the PSYC 1000 curriculum that teaches the study strategies addressed by the LASSI will not have been completed. In a prior data collection, we attempted to obtain learning strategies and adjustment from student-athletes who were not mandated and did not enroll in the course. However, because there was no formal time to collect the data and the athletes were spread across several teams, there was no feasible way to collect data in a valid manner. As a result, complete data sets were at best obtained from 20% of that group. Thus, this study did not include LASSI and SACQ data from that group.

Previous academic performance (e.g., SAT scores, high school percentile rank) and GPA's from fall 2005, spring 2006, fall 2006, and spring 2007 were collected from the university. In addition, enrollment status for all participants was collected for each semester. Thus, attrition and academic performance were measured for the participants' first two years of college.

Data Analyses

The independent variable in this study was course status. For the first set of analyses, there were 4 levels: non-athlete students who were not mandated and not enrolled in the course, non-athlete students who were mandated and enrolled in the course, student-athletes who were mandated and enrolled in the class, and student-athletes who were not mandated and not enrolled

in the course. One-way ANOVA's were used to compare all groups in terms of GPA and percentage of hours passed. For the GPA analysis, previous academic performance (i.e., high school percentile rank) was used as a covariate. The dependent variables were first, second, third, and fourth semester college grade point averages. For the percentage of hours passed analysis, the dependent variables were also first, second, third, and fourth semester percentage of hours passed. To compare the groups in terms of enrollment status, a Chi Square test was used.

For the second set of analyses, the student-athletes who were not mandated and did not enroll in the course were not included, as they had not completed the necessary questionnaires. The dependent variables were scores on the LASSI and SACQ at each administration time. Separate Group by Time repeated measures ANOVA's were used to examine changes in approaches to study strategies and adjustment over the course of the semester. Because the sample size was so small, we also explored the possibility of changes over time within each specific group. Paired samples t-tests with Cohen *d* effect sizes were used to determine how each group changed on the LASSI subscales across time.

Stepwise regression analyses were used to examine which variables were significant predictors of GPA at each semester and for Week 12 academic attachment. For GPA, previous academic performance (i.e., high school percentile rank) was entered first to control for its effects, with LASSI subscale scores and SACQ subscale scores entered next. For adjustment, previous academic performance was entered first, and Week 12 LASSI subscale scores entered next. Because prior research did not examine within group relationships, separate regression analyses were conducted for each of the 3 groups who completed all of the questionnaires.

CHAPTER 3

RESULTS

Descriptive Analyses

Reliability for all subscales was measured using Cronbach's alpha and can be found in Table 1. Tables 2-4 include means, standard deviations, ranges, and correlations among all the variables for each group. All data met acceptable criteria for skewness and kurtosis. Appropriate statistical checks (i.e., Box's M test for homogeneity of slopes for the covariate, Levine's test for homogeneity of variance, and Central Limit Theorem for sample size) resulted in assumptions being met for all analyses.

Academic Performance

Separate ANOVA's were used to compare the groups on their previous academic performance (i.e., SAT score and high school percentile rank). In terms of SAT scores, the groups were significantly different, F (3,156) = 22.99, $p < .001$. Tukey post hoc tests indicated that the non-athletes who did not take PSYC 1000 (Group 2) (M = 1097.24, SD = 130.76) had significantly higher SAT scores compared to the non-athletes who took PSYC 1000 (Group 1) (M = 961.09, SD = 115.62), $p < .001$, as well as the student-athletes who took PSYC 1000 (Group 3) (M = 887.84, SD = 110.33), $p < .001$. The non-athletes' who did not take PSYC 1000 scores were not significantly different from the student-athletes who did not take PSYC 1000 (Group 4) (M = 1047.83, SD = 117.00), $p = .32$). The student-athletes who did not take PSYC 1000 (Group 4) (M = 1047.83, SD = 117.00), also had significantly higher SAT scores than the non-athletes who took PSYC 1000 (Group 1) (M = 961.09, SD = 115.62), $p < .01$, as well as the student-athletes who took PSYC 1000 (Group 3) (M = 887.84, SD = 110.33), $p < .001$. Finally, the non-athlete students who took PSYC 1000 (Group 1) (M = 961.09, SD = 115.62) had higher

SAT scores compared to the student-athletes who took PSYC 1000 (Group 3) (M = 887.84, SD = 110.33); however, this difference was not significant, $p < .05$.

In terms of high school percentile rank, the non-athletes who did not take PSYC 1000 (Group 2) (M = 81.08, SD = 11.77) were significantly higher than the non-athletes who took PSYC 1000 (Group 1) (M = 62.06, SD = 17.22), $p < .001$, as well as the student-athletes who took PSYC 1000 (Group 3) (M = 57.84, SD = 14.55), $p < .001$. The non-athletes' who did not take PSYC 1000 high school percentile rank was not significantly different from the student-athletes who did not take PSYC 1000 (Group 4) (M = 73.93, SD = 19.47), $p = .27$. The student-athletes who did not take PSYC 1000 (Group 4) (M = 73.93, SD = 19.47) high school percentile ranks also were significantly higher than the non-athletes who took PSYC 1000 (Group 1) (M = 62.06, SD = 17.22), $p < .01$, as well as the student-athletes who took PSYC 1000 (Group 3) (M = 887.84, SD = 110.33), $p < .05$. Finally, the non-athlete students who took PSYC 1000 (Group 1) (M = 62.06, SD = 17.22) and the student-athletes who took PSYC 1000 (Group 3) (M = 57.84, SD = 14.55) had equivalent high school percentile ranks, $p = .60$. These findings were expected given that the students who took the PSYC 1000 course were mandated to take the course based on their grades in high school and performance on college admission exams.

Group (non-athlete students who were in the PSYC 1000 course, non-athlete students who were not in the PSYC 1000 course, student-athletes who were in the PSYC 1000 course) by Time (first four semesters of college) repeated measures ANCOVA's or ANOVA's were used to examine independently the students' academic performance, as represented by GPA and percentage of hours passed. For GPA, high school rank was entered as a covariate, though it was not significant F (3,111) = 2.65, $p = .053$, partial $\eta^2 = .067$. The time by group interaction also was not significant F (9, 271) = 1.54, $p = .14$, partial $\eta^2 = .04$ (See Table 5, Figure 1). This

finding suggests that regardless of whether or not students took the PSYC 1000 course and whether or not they were athletes, there were no differences in terms of their grades over the course of first four semesters of college

Because high school rank has not been related to percentage of hours passed, it was not used as a covariate. Again, the Group (4 levels) by Time (4 semesters) interaction was not significant for percentage of hours passed F (9, 278) = 1.69, p = .09, η^2 = .04 (See Table 5, Figure 2). This finding suggests that regardless of whether or not students took the PSYC 1000 course and whether or not they were athletes, there were no differences in terms of the percentages of hours passed across their first four semesters of college (See Table 6, Figure 2).

In addition, retention rates for were examined through Chi Square analyses. These analyses were used separately for the second, third, and fourth semester for college. Because all students were enrolled in the first semester of college, an analysis was not used. For the non-athletes who took PSYC 1000 (Group 1) 92.7% were enrolled for the second semester, 76.4% were enrolled for the third semester, and 69.1% were enrolled during the fourth semester. For the non-athletes who did not take PSYC 1000 (Group 2), 81.6% were enrolled during the second semester, 84.2% were enrolled for the third semester, and 73.7% were enrolled for the fourth semester. For the student-athletes who took PSYC 1000 (Group 3), 91.9% were enrolled during the second semester, 91.9% were enrolled during the third semester, and 78.4% were enrolled during the fourth semester. Finally, for the student-athletes who were not in PSYC 1000 (Group 4), 100% of the student-athletes in the initial group were enrolled for their second, third, and fourth semesters of college.

Chi square analyses indicated that the 4 groups were not significantly different in terms of retention after their second χ^2 = 6.72, df = 3, p = .08; however, they were significantly

different after their third $\eta^2 = 10.44$, $df = 3$, $p < .05$, and fourth semesters of college $\chi^2 = 11.47$, $df = 3$, $p < .01$. Specifically, the student-athletes who did not take PSYC 1000 maintained 100% retention after their third and fourth semesters of college, which was significantly greater than the other 3 groups (See Table 7).

Learning Strategies

Separate Group (non-athlete students who were in the PSYC 1000 course, non-athlete students who were not in the PSYC 1000 course, student-athletes who were in the PSYC 1000 course) by Time (Week 4 and Week 12) repeated measures ANOVA's were used to examine changes approaches to learning and study strategies over the course of the semester. Because the sample size was so small, we also explored the possibility of changes over time within each specific group. Paired samples t-tests with Cohen *d* effect sizes were used to determine how each group changed on the LASSI subscales across time.

In addition, normative data from the LASSI were used to determine meaningful improvements in the use of learning strategies. Specifically, scores above the 50th percentile are considered to be in the average range, thus changes in scores from below to above the 50th percentile were highlighted. Although some of these changes may not have been statistically significant, they have potentially meaningful clinical implications in that the course helped students improve their use of strategies to the point that they would no longer be considered normatively at-risk. Separate one-way ANOVA's were used to examine differences among the groups at different points in the semester (See Table 5, Figures 3-12).

Anxiety

The Group by Time interaction was not significant, F (2, 91) = .34, p = .72, partial η^2 = .007. However, when examining each specific group, the non-athletes who did not take PSYC

1000 (Group 2) changed in terms of how well they managed their anxiety (Week 4 M = 51.53, SD = 28.38; Week 12 M = 58.47, SD = 29.63), t (31) = -1.969, p = .058, Cohen's d = .24, although this change only approached significance and was small in terms of effect size. The student-athletes who took PSYC 1000 (Group 3) demonstrated statistically significant improvements in managing their anxiety when approaching their academic tasks, t (37) = 2.076, $p < .05$, Cohen's d = .28. In addition, the Group 3 improvements represented normative changes as well because scores moved from the at-risk category (Week 4 M = 46.14) to the average category (Week 12 M = 53.43). The non-athletes who took PSYC 1000 (Group 1) did not demonstrate significant improvements, t (24) = .682, p = .50, Cohen's d = .10.

The groups did not differ from each other in terms of managing their anxiety at Week 4 F (2, 91) = 1.426, p = .246, partial η^2 = .03 nor at Week 12 (2, 91) = .683, p = .508, partial η^2 = .015. The student-athletes who took PSYC 1000 demonstrated significant, as well as normative changes, in terms of how well they managed their anxiety toward their academic tasks. The non-athletes who took the class did not demonstrate improvements, whereas the non-athletes who did not take the class improved, but this improvement was not significant. No differences among the groups were seen at Week 4 or at Week 12 (See Table 8, Figure 3). .

Attitude

The Group by Time interaction was not significant, F (2, 91) = .108, p = .90, partial η^2 = .002. T-tests did not exhibit any significant changes for each group; non-athletes who took PSYC 1000 (Group 1), t (24) = .529, p = .60, Cohen's d = .11, non-athletes who did not take PSYC 1000 (Group 2), t (31) = .059, p = .953, Cohen's d = .081, student-athletes who took PSYC 1000 (Group 3), t (37) = .275, p = .785, Cohen's d = .05. In addition, the groups did not differ in general attitude and motivation about being successful in school and implementing the

necessary strategies/behaviors to be successful at Week 4, F (2,91) = 2.389; p = .097, partial η^2 = .05, nor at Week 12, F (2, 91) = 2.12, p = .126, partial η^2 = .045. There were no significant differences for any the groups in terms of their general attitude and motivation about being successful in school and implementing the necessary strategies/behaviors to be successful, and there were not significant differences among the groups at either Week 4 or Week 12 (See Table 8, Figure 4).

Concentration

The Group by Time interaction was not significant, F (2, 91) = .358, p = .70, partial η^2 = .008. However, for Group 3, student-athletes who took PSYC 1000, the students demonstrated statistically significant improvements in their ability to concentrate and direct attention to school and studying (Week 4: M = 41.86, SD = 27.63; Week 12: M = 49.00, SD = 29.91), t (37) = 2.485, $p < .05$, Cohen's d = .25. Neither the non-athletes who took PSYC 1000 (Group 1), t (24) = 1.059, p = .30, Cohen's d = .11, nor the non-athletes who did not take PSYC 1000 (Group 2), t (31) = 1.375, p = .179, Cohen's d = .16, made significant improvements over time. The groups did not differ on this subscale at Week 4 F (2, 91) = 1.545, p = .219, partial η^2 = .033, nor at Week 12 F (2, 91) = 1.106, p = .335, partial η^2 = .024 (See Table 8, Figure 5). The student-athletes who took PSYC 1000 were the only groups to show significant improvements over the course of the semester in their ability to concentrate and direct attention to school and studying. In addition, there were no differences among the groups at Week 4 or at Week 12.

Selecting Main Ideas

The Group by Time interaction was not significant F (2, 91) = 1.152, p = .23, partial η^2 = .032. However, Group 1 (non-athlete students who took PSYC 1000) (Week 4: M = 54.32, SD = 29.09; Week 12: M = 62.68, SD = 28.51), t (24)= -2.44, $p < .05$; Cohen's d = 29, as well as

Group 3 (student-athletes who took PSYC 1000) (Week 4: M = 32.97, SD = 25.06, Week 12: M = 40.68, SD = 26.54), t (37) = 2.831, $p < .05$, Cohen's d = .30, did demonstrate significant improvements in their ability to identify important material that needs additional study/attention. Group 2, the non-athletes who did not take PSYC 1000 did not demonstrate significant improvements, t (31) = .495, p = .617, Cohen's d = .06. There were no significant differences between the non-athlete groups in terms of their ability to select main ideas at neither Week 4, nor at Week 12.

Both groups of students who took the class (non-athletes and student-athletes) demonstrated significant improvements in their ability to identify important material that needs additional study/attention, whereas the non-athletes who did not take the class did not demonstrate this improvement. At the beginning of the semester, the student-athletes who took PSYC 1000 reported significantly lower ability to select main ideas compared to both non-athlete groups, whereas at the end of the semester, the student-athletes who took PSYC 1000 reported significantly less ability compared to only the non-athletes who took the course (See Table 8, Figure 6).

Motivation

The Group by Time interaction was not significant, F (2, 91) = .093, p = .91, partial η^2 = .002. In addition, t-tests showed no significant changes for non-athletes who took PSYC 1000 (Group 1), t (24) = .423, p = .676, Cohen's d = .07, non-athletes who did not take PSYC 1000 (Group 2), t (31) = -.754, p = .457, Cohen's d = .07, nor student-athletes who took PSYC 1000 (Group 3), t (37) = -.042, p = .967, Cohen's d = .00.

The groups did, however, differ at each point in the semester. At Week 4, F (2, 91) = 4.676, p <.05, partial η^2 = .093, the athletes who took PSYC 1000 (M = 42.05, SD = 31.07)

reported significantly less motivation and acceptance of responsibility for performing the specific tasks associated with academic success compared to both the non-athlete PSYC 1000 students (M = 61.72, SD = 30.85, Cohen's d = .54) and the non-athletes who did not take PSYC 1000 (M = 61.22, SD = 28.10, Cohen's d = .69). Although there was a significant overall effect at Week 12, F (2, 91) = 3.693, $p < .05$, partial η^2 = .075 post-hoc analyses did not reveal any specific between group differences. None of the groups demonstrated significant differences in their motivation and acceptance of responsibility for performing the specific tasks associated with academic success over the course of the semester. At the beginning of the semester, the student-athletes who took the course demonstrated significantly lower motivation compared to both non-athlete groups; however, at the end of the semester there were no differences among the groups (See Table 8, Figure 7).

Information Processing

The Group by Time interaction for information processing was significant, F (2, 91) = 4.07, $p < .05$; partial η^2 = .082. Post hoc analyses indicated that the non-athlete students who took PSYC 1000 (Group 1) improved in their use of deep level processing skills to facilitate understanding storage and recall from Week 4 (M = 42.52, SD = 31.63) to Week 12 (M = 60.28, SD = 31.18) of the semester, t (24) = -3.51, $p < .01$; Cohen's d = .57. The non-athlete students who did not take PSYC 1000 (Group 2), t (31) = .298, p = 7.67; Cohen's d = 04, as well as the student-athletes who took PSYC 1000 (Group 3), t (37) = -1.93, p = .06; Cohen's d = .33, did not improve significantly, yet the effect size for the Group 3 changes was in the small to moderate range.

At Week 4, the groups were significantly different in their use of deep level processing skills that facilitate understanding, storage, and recall, F (2, 91) = 6.959, $p < .05$, partial η^2 =

.133. Non-athlete students who did not take PSYC 1000 (M = 56.28, SD = 24.16, Cohen's d = .98) reported significantly better information processing skills than the student- athletes who took PSYC 1000 (M = 32.68, SD = 23.91). In addition, at Week 12, F (2, 91) = 3.298, $p < .05$, partial η^2 = .068, the non-athletes who took PSYC 1000 (M = 59.4, SD = 31.63, Cohen's d = .62) reported significantly higher information processing skills compared to the student-athletes who also took PSYC 1000 (M = 41.59, SD = 29.09). The non-athlete groups did not demonstrate any differences.

The non-athletes who took the PSYC 1000 course demonstrated significant improvements in their use of deep level processing skills to facilitate understanding storage and recall over the course of semester. The other groups did not show significant improvement; however, the student-athletes' who took the course improvement resulted in a small to moderate effect size. At the beginning of the semester the student-athletes who took the course reported significantly less use of information processing skills compared to the non-athletes who did not take the class, but at the end of the semester, the student-athletes who took the class reported less use of information processing skills compared to the non-athletes who took the class. The non-athlete groups did not differ at either point in the semester (See Table 8, Figure 8).

Test-Taking

The Group by Time interaction was not significant, F (2, 91) = 1.44, p = .243, partial η^2 = .03. Although not statistically significant but having a small to medium effect size, as well as changing normatively (Week 4 M = 49.48, SD = 29.17; Week 12 M = 57.64, SD = 27.30), the non-athlete students who took PSYC 1000 (Group 1) did demonstrate improvements in their knowledge and use of effective test preparation and test-taking strategies, t (1, 24) = 1.964, p = .06, Cohen's d = .29. The non-athlete students' who did not take PSYC 1000 (Group 2)

improvement was not significant (Week 4: M = 52.97, SD = 23.38; Week 12: M = 58.47, SD = 24.23), t (31) = 1.701, p = .099, Cohen's d = .23, nor was the change for student-athletes who took PSYC 1000 (Group 3), t (37) = -.263, p = .794, Cohen's d = .04.

At Week 4, the groups did not differ in their knowledge and use of effective test preparation and test-taking strategies, F (2, 91) = 1.131, p = .327, partial η^2 = .024, but at Week 12, F (2, 91) = 3.831, p < .05, partial η^2 = .078 the non-athletes who did not take PSYC 1000 (M = 58.47, SD = 24.23, Cohen's d = .49) reported significantly greater skills compared to the athletes who took PSYC 1000 (M = 42.46, SD = 28.50), whereas there were no differences between the non-athlete groups. None of the groups demonstrated significant improvements in their knowledge and use of effective test preparation and test-taking strategies; however, the non-athletes who took the course did show improvements that resulted in a small to moderate effect size. There were no differences among the groups at the beginning of the semester; however, at the end of the semester, the non-athletes who did not take the course reported greater use of test-taking strategies compared to the student-athletes who took the course (See Table 8, Figure 9).

Time Management

The Group by Time interaction was not significant. In addition, t-tests did not reveal any significant changes for any of the groups: non-athletes who took PSYC 1000 (Group 1), t (24) = -.098, p = .923, Cohen's d = .01, non-athletes who did not take PSYC 1000 (Group 2), t (31) = .57, p = .573, Cohen's d = .07, and student-athletes who took PSYC 1000 (Group 3), t (37) = 1.42, p = .164, Cohen's d = .23. Although the student-athletes who took the course did not demonstrate significant improvements, the effect size was small to moderate. The groups did not differ in their ability to balance the many competing demands of college at Week 4, F (2, 91) = 1.165, p = .317, partial η^2 = .025, nor at Week 12, F (2, 91) = .472, p = .625, partial η^2 = .010.

None of the groups demonstrated significant differences over the course of the semester in terms of their ability to manage their time; however, the improvements that the student-athletes who took the course made resulted in a small to moderate effect size. In addition, there were no differences among the groups at neither the beginning, not the end of the semester (See Table 8, Figure 10).

Study Aids

The Group by Time interaction was not significant, F (2, 91) = 1.94, p = .15, partial η^2 = .04. However, when examining the specific groups, the student-athletes who took PSYC 1000 (Week 4 M = 36.35, SD = 21.99; Week 12 M = 46.30, SD = 31.47), demonstrated significant improvements in their ability to develop and use study aids that support learning, retention, and recall, t (37) = 2.203, $p < .05$, Cohen's d = .37. Neither the non-athletes who took PSYC 1000 (Group 1), t (24) = 1.065, p = .298, Cohen's d = .17, nor the non-athletes who did not take PSYC 1000 (Group 2), t (31) = .505, p = .617, Cohen's d = .09, demonstrated significant changes. There were no differences among the groups at Week 4, F (2, 91) = .728, p = .485, partial η^2 = .016, nor at Week 12, F (2, 91) = 1.752, p = .179, partial η^2 = .037. The student-athletes who took PSYC 1000 were the only students to show significant improvements in their ability to develop and use study aids that support retention, learning, and recall. There were no differences among the groups at the beginning or end of the semester (See Table 8, Figure 11).

Self-Testing

The Group by Time interaction was not significant, F (2, 91) = 1.01, p = .370, partial η^2 = .02 was not significant. However, the student-athletes who took PSYC 1000 (Group 3) demonstrated significant improvements in use of self-monitoring and self-testing of material (Week 4 M = 19.73, SD = 19.56; Week 12 M = 30.24, SD = 28.08), t (37) = 2.510, $p < .05$,

Cohen's d = .38. Neither the non-athletes who took PSYC 1000 (Group 1), t (24) = .803, p = .430, Cohen's d = .13, nor the non-athletes who did not take PSYC 1000 (Group 2), t (31) = .631, p = .533, Cohen's d = .10, changed significantly.

In addition, the groups differed at Week 4, F (2, 91) = 11.347, p < .001, partial η^2 = .20 in that the student-athletes who took PSYC 1000 (M = 19.73, SD = 19.56) reported significantly lower skills compared to both the non-athletes who took PSYC 1000 (M = 47.12, SD = 33.30, Cohen's d = 1.06) and the non-athletes who did not take PSYC 1000 (M = 45.69, SD = 27.42, Cohen's d = 1.10). At Week 12, F (2, 91) = 5.535, p < .01, partial η^2 = .108 the student-athletes who took PSYC 1000 (M = 30.24, SD = 28.08) again reported significantly less skill in self-testing compared to the non-athletes who took PSYC 1000 (M = 51.08, SD = 29.75, Cohen's d = .72) and the non-athletes who did not take PSYC 1000 (M = 48.31, SD = 25.29, Cohen's d = .62). There were no significant differences between the non-athlete groups at either Week 4 or at Week 12. Although the student-athletes who took PSYC 1000 demonstrated significant improvements in their self-testing skills over the course of the semester, they still demonstrate significantly less use of these skills compared to the non-athletes at both the beginning and end of the semester (See Table 8, Figure 12).

Over the course of the semester, the non-athlete students who took PSYC 1000 (Group1) significantly improved in their: ability to identify important material that needs additional study/attention and use of deep level processing skills to facilitate understanding storage and recall. In addition, though not significant but resulting in small to moderate effect sizes, they also improved in their knowledge and use of effective test preparation and test-taking strategies. Normative changes were seen in their test-taking and self-testing skills.

The non-athlete students who were not in the PSYC 1000 course (Group 2) did not demonstrate significant improvements over the course of the semester on any of the subscales; however, did show improvements that resulted in small to moderate effect sizes in their ability to manage anxiety. Although the non-athlete students' who did not take the PSYC 1000 course scores on five of the LASSI subscales were above the at-risk level at pre and post, on the other five subscales, their pre and post scores were below 50, suggesting that they started at and remained at-risk in terms of their lack of use of their cognitive/behavioral learning strategies.

The student-athletes who took the PSYC 1000 course (Group 3) reported little use of key learning strategies; however, after taking the course they improved significantly in five areas: anxiety management, ability to concentrate and direct attention to school and studying, ability to identify important material that needs additional study/attention, ability to develop and use study aids that support learning, retention, and recall, and use of self-monitoring and self-testing of material. In addition, the student-athletes demonstrated normative changes in their ability to manage their anxiety.

Overall, the student-athletes who took PSYC 1000 reported lower study strategies in the areas of selecting main ideas, motivation, information processing and self-testing compared to the non-athletes who took PSYC 1000 and lower study strategies in the areas of selecting main ideas, motivation, information processing, test-taking abilities, and self-testing compared to the non-athletes who did not take PSYC 1000. The non-athletes who did not take PSYC 1000 did not differ from the non-athletes who took PSYC 1000 on any of the reported study strategies (See Table 8, Figures 3-12).

Adjustment to College

Separate Group (non-athlete students who were in the PSYC 1000 course, non-athlete students who were not in the PSYC 1000 course, student-athletes who were in the PSYC 1000 course) by Time (Week 4, Week 8, and Week 12) repeated measures ANOVA's were used to examine self-reported changes in adjustment over the course of the semester. Because the sample size was so small (and thus power would be low), we also explored the possibility of changes over time within each specific group. Paired samples t-tests with Cohen *d* effect sizes were used to examine this possibility. In addition, separate one-way ANOVA's were used to examine differences among the groups at different points in the semester (See Table 9, Figures 13-16).

Academic Adjustment

Regarding the students' success in coping with the increased academic demands of college, there was a significant Group by Time interaction, F (4, 252) = 22.58, $p < .001$, partial $\eta^2 = .27$. The non-athletes who took PSYC 1000 (Group 1) did not demonstrate any significant changes in academic adjustment from Week 4 (M = 52.25, SD = 8.80) to Week 8 (M = 51.85, SD = 9.97), t (54) = .578, p = .57, Cohen's d = .07, nor from Week 8 to Week 12 (M = 50.22, SD = 11.33), t (54) = 1.47, p = .15, Cohen's d = .15. The non-athletes who did not take the PSYC 1000 course (Group 2) demonstrated less academic adjustment from Week 4 (M = 52.25, SD = 8.80) to Week 8 (M = 48.61, SD = 7.95), t (37) = 3.24, $p < .01$, Cohen's d = .35, but no change from Week 8 to Week 12 (M = 48.16, SD = 9.69), t (37) = .422, p = .68, Cohen's d = .05. The student-athletes who took PSYC 1000 (Group 3) reported significant decreases from Week 4 (M = 49.89, SD = 10.31) to Week 8 (M = 32.82, SD = 4.46), t (36) = 9.948, $p < .001$, Cohen's d =

2.15, as well as from Week 8 to Week 12 (M = 30.73, SD = 4.42), t (36) = 2.487, $p < .05$, Cohen's d = .47.

At Week 4, there were no significant differences among the groups in academic adjustment F (2, 127) = .752, p = .474, partial η^2 = .012. At Week 8, F (2, 126) = 64.367, $p <$ .001, partial η^2 = .505, the athletes who took PSYC 1000 (M = 32.81, SD = 4.46) reported significantly less adjustment compared to the non-athletes who took PSYC 1000 (M = 51.85, SD = 9.97, Cohen's d = 2.32) as well as the non-athletes who did not take PSYC 1000 (M = 48.61, SD = 7.95, Cohen's d = 2.44). At Week 12, F (2, 127) = 53.139, $p < .001$, partial η^2 = .456, the athletes who took PSYC 1000 (M = 30.73, SD = 4.42) again reported significantly less academic adjustment compared to the non-athletes who did not take PSYC 1000 (M = 48.16, SD = 9.69, Cohen's d = 2.12), as well as the non-athletes who took PSYC 1000 (M = 50.22, SD = 11.33, Cohen's d = 2.30). The non-athlete groups did no not differ (See Tables 9, Figure 13).

Personal/Emotional Adjustment

In terms of general psychological well-being and reporting of somatic symptoms, there was a significant Group by Time interaction, F (4, 252) = 4.11, $p < .01$, partial η^2 = .06. The non-athletes who took PSYC 1000 (Group1) reported improvements from Week 4 (M = 49.2, SD = 9.25) to Week 8 (M = 51.87, SD = 10.87), t (54) = -2.09, $p < .05$, Cohen's d = .26, but showed a decline from Week 8 to Week 12 (M = 48.11, SD = 10.61), t (54) = 4.409, $p < .001$, Cohen's d = .35. The non-athletes who were not in the PSYC 1000 course (Group2) reported no significant changes in personal/emotional adjustment from Week 4 to Week 8, t (37) = -.568, p = .57, Cohen's d = .07, though they did report less adjustment from Week 8 (M = 46.32, SD = 8.70) to Week 12 (M = 43.45, SD = 7.95), t (37) = 2.406, $p < .05$, Cohen's d = .34. Finally, for the student-athletes who took PSYC 1000 (Group3), there was a significant decrease in

personal/emotional adjustment from Week 4 (M = 49.38, SD = 10.84) to Week 8 (M = 45.19, SD = 8.13), t (36) = 3.63, $p < .01$, Cohen's d = .43, and again from Week 8 to Week 12 (M = 42.51, SD = 7.93), t (36) = 2.26, $p < .05$, Cohen's d = .33.

At Week 4, there were no significant differences among the groups in personal/emotional adjustment F (2, 127) = 1.892, p = .155, partial η^2 = .029. However, at Week 8, F (2, 127) = 6.645, $p < .01$, partial η^2 = .095, the non-athletes who took PSYC 1000 (M = 51.87, SD = 10.87) reported significantly better adjustment compared to the non-athletes who did not take PSYC 1000 (M = 46.32, SD = 8.70, Cohen's d = .55), as well as compared to the athletes who took PSYC 1000 (M = 45.19, SD = 8.13, Cohen's d = .68). At Week 12, F = (2, 127) = 5.048, $p <$ .001, partial η^2 = .074, the non-athletes who took PSYC 1000 (M = 48.11, SD = 10.61) again reported significantly better adjustment than the non-athletes who did not take PSYC 1000 (M = 43.45, SD = 7.95) $p < .05$, Cohen's d = .48, as well as the athletes who took PSYC 1000 (M = 42.51, SD = 7.92) $p < .05$, Cohen's d = .58 (See Table 9, Figure 14).

Social Adjustment

In terms of the students' success in coping with the interpersonal stressors of college, there was a significant Group by Time interaction F (4, 252) = 25.50, $p < .001$, partial η^2 = .29. Specifically, no changes occurred from Week 4 to Week 8, t (54) = .439, p = .66, Cohen's d = .05, nor from Week 8 to Week 12, t (54) = .798, p = .43, Cohen's d = .01 for the non-athletes who did not take PSYC 1000 or for the non-athletes who took PSYC 1000 (Week 4 to Week 8, t (37) = -.515, p = .61, Cohen's d = .06; Week 8 to Week 12, t (37) = 1.525, p = .14, Cohen's d = .14). The student-athletes who took PSYC 1000, however, reported significantly less social adjustment from Week 4 to Week 8, t (36) = -8.46, $p < .001$, Cohen's d = 2.45, and again from Week 8 to Week 12, t (36) = -2.692, $p < .05$, Cohen's d = .41.

At Week 4, there were no significant differences among the groups in social adjustment, F (2, 127) = 1.438, p = .241, partial η^2 = .022. At Week 8, F (2, 127) = 65.51, p < .001, partial η^2 = .508, the athletes who took PSYC 1000 (M = 35.84, SD = 4.23) reported significantly less adjustment than both the non-athletes who took PSYC 1000 (M = 50.78, SD = 7.52, Cohen's d = 2.33), and the non-athletes who did not take PSYC 1000 (M = 49.42, SD = 6.68, Cohen's d = 2.42). The non-athlete groups did not differ. At Week 12, F (2, 127) = 65.517, p < .001, partial η^2 = .508, the athletes who took PSYC 1000 (M = 33.89, SD = 5.27) reported significantly less social adjustment compared to the non-athletes who took PSYC 1000 (M = 50.2, SD = 8.18, Cohen's d = 2.28), as well as the non-athletes who did not take PSYC 1000 (M = 48.45, SD = 6.75, Cohen's d = 2.4). The non-athlete groups did not differ (See Table 9, Figure 15).

Institutional Attachment

In terms of the students' degree of commitment and attachment to the university, there was a significant Group by Time interaction, F (4, 252) = 16.54, p < .001, partial η^2 = .21. Specifically, the non-athletes who took PSYC 1000 (Group 1) did not change in their institutional attachment from Week 4 to Week 8, t (54) = .90, p = .37, Cohen's d = .08, but did report less attachment from Week 8 to Week 12, t (54) = 2.49, p < .05, Cohen's d = .25. For the non-athletes who did not take PSYC 1000 (Group 2), there were no significant changes from Week 4 to Week 8, t (37) = 1.498, p = .14, Cohen's d = .14, nor from Week 8 to Week 12, t (37) = .49, p = .63, Cohen's d = .02. The student-athletes who took PSYC 1000 (Group 3) demonstrated significantly less institutional attachment from Week 4 to Week 8 t (36) = 8.863, p < .001, d = .77, as well as from Week 8 to Week 12, t (36) = 3.352, p < .01, Cohen's d = .71.

At Week 4, there were no significant differences among the groups in attachment to the institution F (2, 127) = 1.176, p = .312, partial η^2 = .018 however, at Week 8 F (2, 127) =

32.114, $p < .001$, partial $\eta^2 = .336$, the athletes who took PSYC 1000 ($M = 25.78$, $SD = 1.29$) reported less attachment to the university compared to the non-athletes who took PSYC 1000 ($M = 30.00$, $SD = 3.23$, Cohen's $d = 1.62$), as well as the non-athletes who did not take PSYC 1000 ($M = 30.47$, $SD = 3.31$, Cohen's $d = 1.86$). Again at Week 12, F (2, 127) = 31.649, $p < .001$, partial $\eta^2 = .333$, the athletes who took PSYC 1000 ($M = 25.11$, $SD = .46$) reported being significantly less attached to the university compared to the non-athletes who took PSYC 1000 ($M = 29.13$, $SD = 3.6$) $p < .001$, Cohen's $d = 1.43$, as well as the non-athletes who did not take PSYC 1000 ($M = 30.29$, $SD = 3.39$) $p < .001$, Cohen's $d = 2.13$. The non-athlete groups did not differ at any points of the semester (See Table 9, Figure 16).

The non-athletes who were in the PSYC 1000 course (Group 1) initially increased in terms of their psychological and physical well-being (personal/emotional adjustment) from the beginning of the semester to the middle of the semester, and then their adjustment lessened as the semester ended. In terms of their commitment to the university (institutional attachment), the non-athlete students who did not take PSYC 1000 did not change from the beginning of the semester to the middle of the semester, but again lessened as the semester ended. There were no significant changes in degree of success in coping with interpersonal demands (social adjustment) or educational demands (academic adjustment) for the non-athletes who took the PSYC 1000 course.

The non-athlete students who did not take the PSYC 1000 course (Group 2) reported no change in terms of both their ability to cope with interpersonal demands (social adjustment) and commitment to the university (institutional attachment). The students reported less ability to cope with the academic demands of college (academic adjustment) from the beginning of the semester to the middle of the semester, but did not change from the middle of the semester to the

end of the semester. In contrast, they reported no change in psychological/physical well-being (personal/emotional adjustment) from the beginning of the semester to the middle of the semester, but less from the middle of the semester to the end of the semester. Overall, the student-athletes who took the PSYC 1000 course (Group 3) reported significantly less adjustment in all areas (psychological/physical well-being, ability to cope with the interpersonal and academic demands of college, commitment to the university) as the semester progressed.

At Week 4, the students reported the same level of adjustment in all areas. At both Week 8 and Week 12, the student-athletes who took PSYC 1000 reported significantly less adjustment in institutional attachment, social adjustment, and academic adjustment compared to the non-athletes who took PSYC 1000, as well as the non-athletes who did not take PSYC 1000; however, at both Week 8 and Week 12, the non-athletes who took PSYC 1000 reported greater personal/emotional adjustment compared to the student-athletes who took PSYC 1000 as well as the non-athletes who did not take PSYC 1000. There were no significant differences in adjustment at Week 8 between the non-athletes who took PSYC 1000 and the non-athletes who did not take PSYC 1000 on institutional attachment, social adjustment, and academic adjustment.

Predictors of Academic Performance and Academic Adjustment

In predicting academic performance, stepwise regression analyses were used to determine the relative influence of previous academic performance, adjustment, and reported study strategies on students' grades. First, high school rank was entered purposefully, so as to control for the effects of previous academic performance. Next, Week 12 LASSI and SACQ scores were allowed to enter in a stepwise manner to determine how students' self-reported study strategies and adjustment were related to their grades (See Tables 10-12).

For the non-athlete students who took PSYC 1000, high school rank accounted for 20% of the first semester GPA variance, F (1, 22) = 5.352, $p < .05$. At Step 2 of the model, Week 12 LASSI concentration entered and accounted for an additional 17% of the GPA variance, F (1, 21) = 6.03, $p < .01$. No other variable entered, thus, the full model for the first semester GPA accounted for 37% of the variance (Adj $R^2 = .30$, $F = 6.03$). As predicted, the students' ability to concentrate and direct attention to school and studying ($\beta = .428$, $p < .05$) school rank was associated with better grades at the end of the first semester; however, high school rank percentile predicted poorer performance ($\beta = -.325$; $p = .09$).

In terms of second semester GPA, high school rank also was significant and accounted for 32% of the variance, F (1, 18) = 8.585, $p < .01$. At Step 2, Week 12 LASSI attitude entered the model and accounted for an additional 18% of the GPA variance, F (1, 17) = 8.472, $p < .05$. The full model accounted for 50% of the variance (Adj $R^2 = .44$, $F = 8.47$). As expected, the students' general attitude and motivation about being successful in school and in implementing the necessary behaviors/strategies to be successful ($\beta = .421$, $p < .05$) was positively related to their GPA's after the second semester of college. Again, high school percentile rank was related negatively to grades earned ($\beta = -.603$, $p < .05$).

For third semester GPA, high school rank accounted for 18%, F (1, 17) = 3.70, $p = .07$. At Step 2, Week 12 LASSI motivation entered and accounted for an additional 28% of the variance, F (1, 16) = 8.05, $p < .05$. At Step 3, Week 12 LASSI anxiety entered the model and accounted for another 18%, F (1,15) = 7.05, $p < .05$, of the variance. Thus, the overall model accounted for 64% of the third semester GPA variance (Adj $R^2 = .44$, $F = 8.47$). The students' motivation and acceptance of responsibility for performing the specific tasks ($\beta = .688$, $p < .01$) associated with academic success was related to better grades. Surprisingly, their ability

to manage the anxiety associated with their academic tasks (β = –.468, $p < .05$) was related negatively to grades after the third semester. Again, high school percentile rank was related negatively to grades earned (β = –.544, $p < .01$).

Regarding fourth semester GPA, high school rank was the only significant predictor, accounting for 22% of the variance (Adj $R^2 = .17$), F (1, 17) = 4.729, $p < .05$. Again, high school rank was related negatively (β = -.467, $p < 05$) to grades after the first two years of college, suggesting that the better the students did in high school, the poorer they performed in college (See Table 10).

GPA's for Non-Athlete Students who did Not Take PSYC 1000 (Group 2)

In predicting first semester GPA for the non-athlete students who did not take PSYC 1000, high school rank accounted for only 1% of the variance, F (1, 30) = .183, p =.67. At Step 2, Week 12 SACQ academic adjustment entered the model and accounted for 31% of the variance, F (1, 29) = 13.151, $p < .01$. Thus, the overall model accounted for 32% of the variance (Adj $R^2 = .27$, $F = 6.70$); the better adjusted to academic challenges of college the students were at the 12th week, (β = .558, $p < 01$), the better grades they earned that semester.

For the second semester of college, high school rank was again not significant, accounting for only 3% of the variance, F (1, 28) = .028, p =.868. At Step 2, Week 12 LASSI motivation entered the model and accounted for 34% of the variance, F (1, 27) = 13.824, $p < .05$. Overall, the model accounted for 37% of the variance (Adj $R^2 = .29$, $F = 6.93$). The students' motivation and acceptance of responsibility for performing the specific tasks associated with academic success at Week 12 (β = .589, $p < 01$), was associated with higher grades that semester.

For the third semester of college, high rank was again not a significant predictor, accounting for only 6% of the variance, F (1, 24) = 1.557, p =.224, β = .247. At Step 2, Week 12 LASSI motivation entered the model and at Step 3, Week 12 LASSI self-testing were entered the model, accounting for an additional 20%, F (1, 23) = .6.303, $p < .05$, and 13%, F (1, 22) = 4.733, $p < .05$, of the variance, respectively. Thus, the overall model accounted for 39% of the variance (Adj R^2 = .31, F = 4.76). The students' motivation and acceptance of responsibility for performing the specific tasks associated with academic success (β = .654 $p < 01$) was associated with better grades that semester, whereas their use of self-monitoring and self-testing of material (β = –.408, $p < 05$) was related to lower grades.

High school rank was not significant for fourth semester GPA and only accounted for 12% of the variance, F (1, 21) = 2.79, p =.11, β = .342. At Step 2, Week 12 SACQ academic adjustment entered the model and accounted for an additional 41% of the variance, F (1, 20) = 16.974, $p < .01$. Overall, the model accounted for 53% of the variance (Adj R^2 = .47, F = 10.94) and the students' academic adjustment at the end of the first semester (β = .638, $p < .01$) was related positively to their grades that semester (See Table 11).

GPA's for Student-Athletes who Took PSYC 1000 (Group 3)

For first semester GPA, high school rank was not a significant predictor, accounting for only 9% of the GPA variance, F (1, 35) = 3.382, p =.07. At Step 2, Week 12 LASSI motivation, and at Step 3, information processing entered the model, and accounted for an additional 15%, F (1, 34) = 6.732, $p < .05$, and 10% of the variance, F (1, 33) = 5.19, $p < .05$, respectively. Thus, the full model accounted for 34% of the first semester GPA, (Adj R^2 = .28, F = 5.72). The student-athletes' motivation and acceptance of responsibility for performing the specific tasks associated with academic success (β = .550, $p < .01$) was related positively to their first semester

grades, whereas their use of deep level processing skills to facilitate understanding, storage and recall (β = –.369, $p < .05$) was negatively associated with their grades .

For second semester GPA, high school rank was significant, F (1, 35) = 4.783, $p < .05$, β = .347, and accounted for 12% of the variance (Adj $R^2 = .10$). No other variable contributed significantly to the model. Higher high school ranks were related positively to higher grades the second semester of college. For the third semester of college, high school rank was not significant, but did account for 9% of the variance (Adj $R^2 = .059$), F (1, 32) = 3.052, $p = .09$. No other variables entered the model.

For fourth semester GPA, high school rank was not a significant predictor, accounting for 12% of the variance, F (1, 27) = 3.759, $p = .06$. At Step 2, Week 12 SACQ academic adjustment entered the model, adding an additional 22% of the variance, F (1, 26) = 8.574, $p < .01$. At Step 3, Week 12 LASSI test-taking skills entered the model, accounting for an additional 17% of the variance, F (1, 25) = 8.846, $p < .01$. Thus, the overall model for fourth semester GPA accounted for 51% of the variance (Adj $R^2 = .45$, F) = 8.76, $p < .001$). The student-athletes' academic adjustment after their first semester of college (β = –.574, $p < .01$) was surprisingly related negatively to their grades during fourth semester of college, whereas their knowledge and use of effective test preparation and test-taking strategies after their first semester of college (β = .433, $p < .01$) was associated positively with higher grades. In addition, the student-athletes' high school percentile rank was significant at this step (β = .327, $p < .01$) and was also related to higher grades (See Table 12).

Academic Adjustment

Separate stepwise regression analyses were used to determine the relative influence of previous academic performance and reported study strategies on students' Week 12 academic

adjustment. First, high school rank was entered purposefully, so as to control for the effects of previous academic performance. Next, Week 12 LASSI were allowed to enter in a stepwise manner to determine how students' self-reported study strategies was related to their academic adjustment at the 12th week of school (See Table 13).

In terms of Week 12 academic adjustment for the non-athlete students' who took the PSYC 100 course (Group 1), high school rank was not significant, accounting for only 2% of the variance, F (1, 22) = .448, p =.51. At Step 2, Week 12 LASSI attitude entered the model, accounting for an additional 31% of the variance, F (1, 21) = 9.803, $p < .01$. Thus, the overall model accounted for 33% of the variance (Adj R^2 = .27, F = 5.22, p <.05). The students' general attitude and motivation about being successful (β = .564, $p < .01$) was associated with better academic adjustment in the 12th week of school.

For the non-athletes' who did not take the PSYC 1000 course (Group 2) academic adjustment, high school rank was not a significant predictor and did not account for any of the variance, F (1, 30) = .079, p =.78. At Step 2, Week 12 LASSI motivation entered the model, accounting for 43% of the academic adjustment variance, F (1, 29) = 22.1, $p < .001$. Overall, the model accounted for 43% of the variance (Adj R^2 = .40, F = 11.15, $p < .001$) and the students' motivation and acceptance of responsibility for performing the specific tasks associated with academic success (β = .662, $p < .001$) was related to better academic adjustment.

For the student-athletes' who took the PSYC 1000 course (Group 3) academic adjustment, high school rank was not a significant predictor, F (1, 35) = .037, p =.85. At Step 2, Week 12 LASSI selecting main ideas entered the model, accounting for 16% of the variance, F (1, 34) = 6.395, $p < .05$. At Step 3, Week 12 study aids entered the model, accounting for and an additional 21% of the variance, F (1, 33) = 11.08, $p < .01$. Thus, overall the model accounted for

37% of the variance (Adj $R^2 = .31$, $F = .648$, $p < .01$). The student-athletes' ability to identify important material that needs additional study/attention ($\beta = .649$, $p < .001$) was associated with better academic adjustment, whereas their ability to develop and use study aids that support learning, retention, and recall ($\beta = -.539$, $p < .01$) was related negatively to academic adjustment.

CHAPTER 4

DISCUSSION

Purpose

This study examined the effectiveness of a college student success course in improving use of study strategies over the first semester, college adjustment over the first semester, and academic performance (i.e. GPA, percentage of hours passed, enrollment status) over the course of their first 2 years of college. Specifically, I examined differences among (1) non-athlete students who took the student success course, (2) non-athlete students who did not take the student success course, (3) student-athletes who took the students success course, and (4) student-athletes who did not take the student success course. In addition, within each group, I examined how well previous academic performance (i.e., high school rank) and reported use of study strategies and adjustment at the end of the first semester predicted the students' semester GPAs, as well as how well previous academic performance (i.e., high school rank) and self-reported use of study strategies predicted their academic adjustment at the end of the first semester.

This study was based on Tebbe and Petrie's (2006) research that suggested student success courses can help student athletes improve their study strategies and class performances (i.e., GPA, percentage of hours passed). That research study was extended in several ways. First, freshmen non-athlete students were included to serve as a comparison group, of these non-athletes, one group was mandated to take the PSYC 1000 course, whereas the other group was not. Second, adjustment was measured at three points across the semester, compared to at only 2 points in the initial study. Finally, academic performance was measured after each of the first

four semesters of college, compared to after only the first two semesters of college in the original study.

Academic Performance

In examining the grades earned by the four groups (non-athletes who took the course, non-athletes who did not take the course, student-athletes who took the course, student-athletes who did not take the course), previous academic performance (i.e., high school rank) was not a significant covariate, nor were there any group by time effects across the four semesters. There also were no group by time effects for percentage of hours passed. Regarding retention, both non-athlete groups and the student-athlete group that took PSYC 1000 were equivalent; though the student-athletes who did not take PSYC 1000 were retained at 100% across the four semesters, which was significantly higher than the other groups.

These results support the academic performance hypotheses in that the student-athletes and non-athletes who enrolled in and passed the PSYC 1000 Learning Strategies course earned equivalent GPA's and percentage of hours passed after the first, second, third, and fourth semesters of college compared to their nonmandated cohorts who did not enroll in the class. In addition, the groups that were mandated to take PSYC 1000 maintained equivalent retention rates to the non-athletes who did not take PSYC 1000. These findings are particularly noteworthy because the students who took the PSYC 1000 course were academically at-risk, that is they entered the university with lower high school percentile rank and SAT scores than the students who were not mandated to take the course.

These findings suggest that the course may have been helpful in assisting these at-risk students overcome some of their academic deficits so they could succeed in college, which is consistent with previous research (Tebbe & Petrie, 2006; Howard & Jones, 2000). For example,

Tebbe and Petrie (2006) found that the at-risk student-athletes who were mandated to take the same PSYC 1000 course as in the current study also earned equivalent GPA's during their first and second semesters of college compared to their non-mandated cohorts. The PSYC 1000 course curriculum that was used in both Tebbe and Petrie's (2006) original research, as well as in the current study, emphasized the mastery of self-regulatory skills (i.e., goal-setting, motivation, time management) and learning strategies (i.e., note-taking, test-taking, information processing) have been found to be essential for college success (Kriner & Shriberg, 1992; Petrie & Helmcamp, 1998).

In addition, the small class sizes provided ample opportunity for the students to interact with their instructors, thereby allowing them to receive more personal attention than what they might have obtained in larger classes. Learning these skills and receiving this support seems to have assisted the students (both athletes and non-athletes), who came into college academically underprepared, overcome their academic deficiencies enough to perform as well as their better prepared peers. Although the students' (non-athletes and athletes) GPA's were lower than the students who were not mandated to take the course, this difference was not significant, and the students who took the course demonstrated other measures of academic progress. Specifically, the students who took the PSYC 1000 course passed their classes and stayed enrolled at equivalent rates across their first two years of college, which suggests that the effects of the course are multifaceted.

Learning Strategies

A major focus of the PSYC 1000 course was teaching study strategies, such as note-taking, time management, and test-taking skills, that have been associated with academic success (Petrie & Helmcamp, 1998). In this study, although student-athletes who took the PSYC 1000

course initially reported less use of study strategies compared to both non-athlete groups, they also demonstrated improvements in most areas across the semester. The non-athletes who took PSYC 100 also improved on multiple dimensions of learning, whereas the non-athletes who did not take PYC 1000 showed no improvements.

Specifically, the student-athletes who took PSYC 1000 reported significant improvements over the course of the semester in their ability to (a) manage their anxiety, (b) concentrate and direct their attention to school and studying, (c) identify important information on which they need additional study time, (d) develop and use study aids that support their learning, retention, and recall, and (e) use self-monitoring and self-testing of material. The non-athlete students who took PSYC 1000 reported significant improvements in (a) their ability to identify important material that needs additional study time, and (b) use of deep level processing skills to facilitate their understanding, storage, and recall. The non-athletes who did not take the course did not demonstrate significant improvements in any of the areas over the course of the semester.

These findings are consistent with previous research that has emphasized the importance of learning strategies in academic success (Upcraft & Gardner, 1989), as well as research supporting the effectiveness of student success courses (Petrie & Helmcamp, 1998) . The strategies taught in the PSYC 1000 course are similar to strategies taught in most student success courses that have been found to be beneficial in helping students get off academic probation (Coleman & Freedman, 1996), maintain retention (Polansky et al., 1993), complete more hours (Fidler & Hunter, 1989), earn higher grades (Cone & Owens, 1991), and graduate (Shanley & Witten, 1990). Specifically, the ability to manage anxiety toward academic challenges, maintain appropriate concentration levels while studying and taking exams, identifying the most important

material out of all the information that is provided, using study aids to assist in comprehension of material, and being able to adequately self-monitor what one has learned are all key strategies that are necessary for college-students to achieve academic success.

Although both the non-athletes and the athletes who took PSYC 1000 were mandated to take the class due to their admission status that classified then as "at-risk," the student-athletes demonstrated lower skills on most study strategies at the beginning of the semester. For example, the athletes reported less skill in selecting main ideas, motivation, information processing and self-testing. Furthermore, the student-athletes scored significantly lower on their college entrance exams, but earned equivalent high school percentile ranks as the non-athletes. It appears that although they may have earned similar grades in high school, student-athletes do not possess the necessary cognitive strategies to succeed at the rigorous academic challenges of colleges, which supports previous research (Sedlacek & Adams-Gaston, 1992; Sellers, 1992).

Anecdotal reports of college student-athletes often include reports of high school teachers assisting them in maintaining eligibility by assigning them grades that they may or may not have earned. High school students who receive grades that they truly earned, likely learn the connection between the use of essential study strategies and better academic performance, or at least are put in the position where such learning can occur. That is, they learn that if they use necessary study strategies, they will receive a good grade because they will have engaged in strategies that facilitate deep level processing and learning. Failure to utilize these strategies, however, will likely result in poor grades because whatever learning did occur will likely have been on a more superficial level. If student-athletes receive grades that they did not earn through effort and the use of necessary study strategies, they will not likely learn this connection. This lack of learning experience and important connection may contribute to why the student-athletes

reported less use of study strategies at the beginning of the semester, as well as why they reported more improvement over the course of the semester. These students simply may have had more to learn. Peverly, Brobst, Graham, and Shaw (2003) suggested that college students do not have highly developed abilities to determine how prepared they are for an exam or how well they did on the exam, and this may be even worse for college student-athletes whose high school experiences did not adequately teach them the metacognitive strategies necessary to do so.

Students who have learned to implement the necessary strategies to earn good grades have these experiences upon which to build confidence in their academic tasks. If student-athletes do not have similar experiences, they may not develop sufficient academic self-efficacy. Although high school teachers may believe they are helping the student-athletes by giving them grades to maintain their eligibility, the unfortunate reality is that these efforts likely undermine student-athletes' future academic success. Often, student-athletes are praised for their athletic abilities, but not expected to perform in the classroom as well. These lowered expectations may lead to a self-fulfilling prophecy in which student-athletes do not actually believe they can succeed in both academics and athletics.

Pintrich and De Groot (1990) reviewed research examining the relationships among self-regulation strategies, self-efficacy in academic work, and cognitive strategies used to learn information. Overall, their summary indicates that students who have high self-efficacy in their academic pursuits engage in more efficient metacognition, make better use of cognitive study strategies, and demonstrate greater persistence toward their academic tasks compared to students who do not believe they are capable of academic success. Their own research expanded on these ideas and indicated that self-efficacy was related positively to academic performance and cognitive engagement. Thus, students who already believed they were capable of succeeding in

academics reported greater use of the cognitive strategies necessary to achieve this goal. In addition, these students were more likely to persist in their academic pursuits even when the tasks were uninteresting or difficult. Interestingly, this relationship was not affected by prior academic achievement.

Pintrich and De Groot (1990) proposed that although teaching cognitive strategies is imperative to improve academic performance, interventions aimed at improving the students' self-efficacy in this area may be a key component to enhancing the students' use of these cognitive strategies. Furthermore, the authors proposed that the students who had more intrinsic motivation to learn the material, rather than just earn a good grade, were more cognitively engaged in the process. Based on Pintrich and DeGroot's (1990) findings, it seems plausible that if student-athletes already believe they are less capable of succeeding in the classroom, they may be less likely to engage in the cognitive activities required to be successful. Thus, their lack of using crucial study strategies may be related to them not believing they can, as much as not knowing how. The current study included motivation and attitude; however, it did not directly examine students' academic self-efficacy. Future research should include this variable to determine how the students' belief in their academic abilities relates to their academic performance and their use of key study strategies.

College Adjustment

It was predicted that all participants would decrease in adjustment over the course of the semester, but that this decrease would be significantly less for those students who were enrolled in PSYC 1000. Non-athletes who took the PSYC 1000 course initially increased in terms of personal/emotional adjustment, but then reported decreased adjustment from the middle to the end of the semester. In terms of institutional attachment, they initially demonstrated no changes,

and then reported a decrease as the semester progressed. They reported no significant changes in either academic or social adjustment over time.

The non-athlete students who did not take the PSYC 1000 reported no changes in social adjustment and institutional attachment, but reported less academic adjustment from the beginning of the semester to the middle of the semester and no change to the end of the semester. They reported no change in personal/emotional adjustment from the beginning of the semester to the middle of the semester, but a decrease in adjustment from the middle of the semester to the end of the semester. The student-athletes reported significantly less adjustment in all areas as the semester progressed, as well as significantly less adjustment on all subscales compared to the other 2 groups at all points in the semester. Thus, the hypothesis does not appear to be supported.

Although the student-athletes reported a continual decline in all areas of adjustment as the semester progressed, it is unclear whether this decline represented student-athletes' true adjustment over time or if the decrease was attenuated as a result of being in the PSYC 1000 course. Because there was not a direct comparison group of student-athletes, this question is unanswerable. The only way to determine if this decrease in adjustment was attenuated due to the benefits of the course would be to have 2 groups of student-athletes randomly assigned to taking the course versus not taking the course, which would be a direction for future research.

If the student-athletes' decline was indeed attenuated, several components of the course may have contributed. A major focus of the course was to provide the student-athletes the opportunity to interact with their instructor and classmates in a more informal manner than typical college courses offer. Thus, the student-athletes were encouraged to participate in class discussion on several meaningful topics, such as choices regarding sexual activity, stress and

coping skills, racial identity, decision making, and stages of change. These topics are not typically taught in traditional college courses, yet are key aspects of the college experience. The small class size and instructor openness to these sensitive topics may have provided the students the opportunity to frankly and honestly discuss these issues, thereby leading to a better understanding of how it affects their lives. Ideally this awareness will assist the students in making better decisions for themselves, which will ultimately lead to better adjustment. Furthermore, these topics were discussed with the student-athlete experience and culture in mind to help make the discussions more applicable. In addition, guest speakers representing important campus services and other topics relevant to student-athletes were invited to address the class.

Whether attenuated or not, the reality is that the student-athletes' adjustment was poorer as the semester progressed. A possible explanation for the decrease in adjustment is the college sport experience itself. Bulling (1992) suggested that participation in college athletics may negatively impact college student development and Ferrante, Etzel, and Lantz (2002) and Pinkerton et al. (1987) indicated that college athletes are at an increased risk for vulnerability to psycho-social stressors. Thus, college student-athletes may be particularly susceptible to maladaptive adjustment, and should be targeted for assistance during their first semester of college. Unfortunately, college student-athletes typically underutilize campus counseling services (Pinkerton et al., 1989), thus interventions may need to be structured and required if student-athletes are to be reached.

One possible reason that student-athletes may struggle is the difficulty in balancing academic and athletic responsibilities. The transition from being a high school student-athlete to becoming a college student-athlete is particularly hard because the student-athletes must adjust to increased challenges in both athletics and academics, such as competing academic and athletic

demands, physical fatigue from intense workouts, and threatened self-efficacy in both academics and athletics. Often, student-athletes cope by investing themselves in one area, which is generally athletics, to the detriment of the other (academics) (Pearson & Petitpas, 1990; Howard, 1993). Furthermore, over half of the student-athletes who took the PSYC 1000 course played a fall sport (i.e., football, volleyball, women's soccer, cross-country), and thus were in full sport participation during the study. It is possible that these same student-athletes would not demonstrate the same level of lowered adjustment during the spring semester, when they are in the off-season. Future research may want to compare adjustment during student-athletes' competitive season and their off-season.

In addition, the student-athletes' transition to a new sport environment may pose a threat to their confidence in their athletic abilities. Stryker and Serpe (1994) emphasized that when individuals perceive a certain role to be particularly important, disruptions to that role may have more psychological effects. Thus, if student-athletes are focusing their efforts on their athletic roles, lack of playing time and doubts about one's ability may cause psychological distress. In order to be recruited to a Division I university, such as the school used in this study, student-athletes must have been exceptional at the high school level. Thus, most of the student-athletes in this study were used to consistent playing time and recognition for their athletic abilities. The reality, however, is that at the college level, their teammates also were exceptional athletes, which translates to greater competition and less playing time recognition from some. This disruption in athletic confidence could contribute to the student-athletes' poorer adjustment.

Predictors of Academic Performance and Academic Adjustment

Traditional academic measures (i.e., high school percentile rank, SAT scores) have typically been used to predict college academic success; however, these relationships have often

been small to moderate (Young & Sowa, 1992; Wolfe & Johnson, 1995), and these variables have been suggested to be insufficient to accurately predict student-athletes' academic performance (Walter, Smith, Hoey, Wilhelm, & Miller, 1987; Petrie, Andersen, & Williams, 1996). As a result, researchers have examined how non-cognitive variables, such as self-concept, realistic self-appraisal, and availability of support, and might predict student-athletes' academic success (Tracey & Sedlacek, 1989). Because academic performance is more than a function of academic ability, non-cognitive variables might shed light on what factors might be important to clued when designing interventions. In this study, I wanted to determine what were the best predictors of college grades by using traditional cognitive variables (i.e., high school percentile rank), non-cognitive variables (i.e., reported used of study strategies), and adjustment.

In terms of predicting GPA across four semesters, the traditional cognitive variable, high school rank, was a significant predictor only for one group (non-athletes who took PSYC 1000), and then it was negatively related. In most instances, high school percentile rank simply was unrelated to subsequent academic performance in college, which is consistent with previous research that has found that cognitive variables are not valid predictors of student-athletes' academic success (Petrie, Andersen, & Williams, 1996; Sedlacek, 2003). It is possible that the aforementioned high school grade inflation contributed to high school rank not being a valid predictor. If the student-athletes' high school grades were not true representations of their previous academic ability, it would make sense that they would not be related to their college academic performance.

Non-cognitive variables (i.e., reported used of study strategies), however, did explain a large percentage of the grade point variance for both the non-athletes and student-athletes who were enrolled in the PSYC 1000 course. Specifically, the non-athletes' ability to concentrate,

attitude, motivation, and anxiety management all contributed significant amounts to the GPA variance. The student-athletes' motivation and use of test-taking strategies predicted significant portions of the GPA variance, whereas their information processing skills were related negatively to GPA. For the non-athletes who did not take the PSYC 1000 course, their GPA's were significantly and positively predicted by motivation and the use of self-testing strategies. It seems that a consistent predictor of the GPA variance for all of their groups was their general motivation/attitude toward college, which is consistent with Tebbe and Petrie's (2006) original study, as well as predicted in the current study. Robbins, Lauver, Le, Davis, Langley, and Carlstrom (2004) pointed out that motivational factors are amenable to change. In fact, the PSYC 1000 curriculum included aspects of motivation and achievement orientation in regard to how students can learn to shift from a performance orientation that focuses on the outcome (i.e., grade in the course) to a mastery orientation that focuses on actually learning the material. Although the students who took the course did not demonstrate significant improvements in their motivation, this was a thoroughly discussed topic in the course. Future research should focus on how interventions could be designed to facilitate students increasing their motivation toward their academic pursuits.

In terms of adjustment, only academic adjustment was a significant predictor of the students' grades, and then only for the non-athlete students' who did not take the PSYC 1000 course in the first and fourth semesters, and for the student-athletes' who took PSYC 1000 in their fourth semester of college (though it was negatively related). The academic adjustment subscale includes motivation toward academic goals, how this motivation is actually being applied, academic success, and satisfaction with the academic environment. Therefore, it was

hypothesized that Week 12 academic adjustment would be significant predictors for all participants' grades, and results partially supported this hypothesis.

In predicting Week 12 academic adjustment, high school rank was not a significant predictor for any of the groups. General attitude and motivation about being successful in school and implementing the necessary strategies/behaviors to be successful predicted a significant portion of the variance for the non-athletes who took the PSYC 1000 course. For the non-athletes who did not take the course, motivation and acceptance of responsibility for performing the specific tasks associated with academic success predicted a significant portion of the variance. Finally, for the student-athletes who took the PSYC 1000 course, their ability to identify important material that needs additional study/attention was significant and positively related; however, their use of study aids that support learning, retention, and recall was significant, but negatively related to their adjustment. Again, the academic adjustment subscale includes motivation toward academic goals, strategies used to apply this motivation, academic success, and satisfaction with the academic environment. Thus, it makes sense that the students' general motivation toward their academic pursuits and other learning strategies would be related to their academic adjustment.

For the non-athletes, attitude and motivation were significant predictors of their academic adjustment, and for all groups, motivation/attitude was a significant predictor of their college grades, suggesting that the students' emotional state toward their academic pursuits is important. As previously mentioned, motivational factors seem to be a key component for college academic success (Robbins et al., 2004) and the academic adjustment findings support this. Robbins et al. (2004) conducted a meta-analysis regarding psychosocial and study skills factors and college outcomes. Academic goals, institutional commitment, social support, social involvement,

academic self-efficacy, academic skills, financial support, and institutional selectivity were related positively to retention. Academic goals, academic self-efficacy, and academic skills were the strongest predictors of college grades. Achievement motivation was the strongest predictor of GPA. The authors emphasized the importance of both academic engagement as well as motivation when examining retention. Although we did not directly measure achievement motivation, results of this study do seem to parallel Robbins et al.'s (2004) findings regarding the importance of students' emotional states toward their academic pursuits.

Several of the findings from the regression analyses were surprising. Specifically, the negative relationships between the LASSI subscales (i.e., anxiety, self-testing, information processing, study aids) and GPA's and academic adjustment were not expected. Because there does not seem to be a consistent pattern among these results in terms of occurring during certain semesters, for certain groups, or for specific subscales, it is possible that these findings may be spurious. Examination of previous research did not result in support for these negative relationships.

Intervention Implications

In 2003, the NCAA changed initial eligibility criteria for college admission. A sliding scale was put into effect that allowed lower standardized test scores if high school percentile rank was high enough (Gurney & Weber, 2007). Student-athletes could perform extremely poorly on college admission exams, yet still gain entrance to the university based on their high school grades. Thus, grade inflation would allow even more academically underprepared students admission and universities are accepting more and more student-athletes who by traditional academic standards would not be expected to succeed in college. If universities are

going to follow these practices, it is imperative that they also provide the support these student-athletes need to be successful.

A student success course, such as the PSYC 1000 course in this study, might be an ideal intervention to help these academically underprepared students learn the self-regulatory and cognitive strategies necessary to succeed at the college level. Results of this study suggest that this type of course could assist students, particularly student-athletes, in learning the study strategies in college that they may not have learned during high school. In addition, results of this study suggest that this sort of course assists at-risk students maintain grades, hours passed, and retention rates that are comparable to their counterparts who do not demonstrate the same academic deficiencies. Other academic support might include tutors, class monitoring systems, and a variety of other measures aimed at providing resources for student-athletes may struggle in college.

Limitations and Implications for Future Research

Although this study suggests that student success courses are beneficial in helping at-risk students overcome their academic deficiencies by teaching necessary skills to succeed in college, it is limited in several ways. First, there was no direct comparison control group of at-risk student athletes who did not take the course but completed all questionnaires. At the university where the study was conducted, all at-risk student athletes were mandated to take the course, and thus, a true comparison group could not be found. To control for that, 3 other groups of students were included so some comparisons could be made. Second, adjustment and reported use of study strategies were measured only during the first semester so long term changes could not be examined. Third, only self-report measures were used. Thus, the data was based on the participants' perceptions, which may not have been as accurate as reports from others who were

in a better position to provide information on the student. By including behaviorally based measures or reports by professors, advisors, etc, we might have gained a better understanding of the students' true use of study strategies, and their adjustment to college.

Future research should directly compare at-risk athletes enrolled in a course with those who are not enrolled. Only through such an experimental design can true causal effects of the course be determined. Measures including motivation, self-efficacy, and athletic identity would be important to include to determine if the effects of the course were moderated. Future research should address longer-term changes in adjustment and study strategies by administering the measures throughout the course of 2 years of college. Finally, measuring several cohorts of students (both athletes and non-athletes) at multiple times across the first 2 years of college would allow for a cohort sequential design. This would allow for examination of academic performance, learning strategies, and adjustment within several different groups, as well as between several different groups.

Summary and Conclusions

This study replicated and extended Tebbe and Petrie's (2006) research that suggested that a student success course is an effective intervention to assist student-athletes in the adjustment to college. Overall, results from the current study support the findings from the previous study, as well as shed light on possible explanations for student-athletes' apparent difficulty with the adjustment to college. University athletic departments should consider the type of interventions they are offering, and perhaps include more programs designed to meet the unique needs of freshmen student-athletes.

Table 1
Cronbach's Alpha Coefficients for LASSI and SACQ Subscales

Week 4 LASSI Subscales				**Week 12 LASSI Subscales**	
Anxiety	.83			Anxiety	.87
Attitude	.71			Attitude	.76
Concentration	.86			Concentration	.88
Selecting MI	.84			Selecting MI	.88
Motivation	.88			Motivation	.87
Info Processing	.76			Info Processing	.85
Test-Taking	.72			Test-Taking	.77
Time Mgmt	.83			Time Mgmt	.87
Study Aids	.59			Study Aids	.70
Self-Testing	.78			Self-Testing	.83
Week 4 SACQ Subscales		**Week 8 SACQ Subscales**		**Week 12 SACQ Subscales**	
Academic	.86	Academic	.85	Academic	.88
Personal/Emotional	.86	Personal/Emotional	.88	Personal/Emotional	.91
Social	.89	Social	.90	Social	.90
Institutional Attach	.85	Institutional Attach	.89	Institutional Attach	.92

Table 2

Correlation Matrix of Measured Variable for Group 1(Non-Athlete PSYC 1000)

Variable	1	2	3	4	5	6	7	8	9
1. HS RANK	1								
2. SAT SCORE	-.46**	1							
3. SEM1 GPA	-.25	.22	1						
4. SEM2 GPA	-.18	.03	.40**	1					
5. SEM3 GPA	.08	-.04	.56**	.53**	1				
6. SEM4 GPA	-.31	-.00	.30	.52**	.47**	1			
7. SEM1 HRS	-.12	.18	.53**	.11	.21	.08	1		
8. SEM2 HRS	-.11	.07	.23	.71**	.45**	.52**	.15	1	
9. SEM3 HRS	.09	-.07	.53**	.14	.81**	.36*	.19	.21	1
10. SEM4 HRS	-.29	-.03	.25	.43*	.36*	.83**	-.02	.57**	.38*
11. W4 ANX	-.11	-.05	.20	-.04	-.24	.08	.20	-.15	-.20
12. W4 ATT	-.25	.19	.28	.11	.16	.05	.07	-.07	-.01
13. W4 CONCEN	-.22	.10	.36	.21	.15	.20	.33	-.01	.07
14. W4 INFOPRO	.00	-.09	-.13	-.15	-.02	.01	-.04	-.36	-.04
15. W4 MOT	-.20	-.04	.24	.01	.27	.43	.05	-.30	.23
16. W4 SELF-TEST	-.18	.08	-.04	-.16	.00	-.04	.04	-.28	-.23
17. W4 SEL MI	-.08	.13	.16	.04	-.01	.06	-.06	-.15	.15
18. W4 ST AIDS	-.39	.29	.07	.00	.18	.26	.01	-.18	.05
19. W4 TIME MGT	-.07	-.16	.24	.13	.11	.13	.12	-.25	.13
20. W4 TESTTAK	-.29	.08	.37	.23	.03	.18	.10	.07	.08
21. W12 ANX	-.34	.05	.43*	.19	-.04	.11	.06	.01	-.17
22. W12 ATT	.14	-.24	.35	.38	.35	-.09	.04	.10	.18
23. W12 CONCEN	-.27	.14	.54**	.41	.36	.16	.41*	.12	.12
24. W12 INFOPRO	-.04	-.02	.08	.15	.41	.14	.05	-.06	.20
25. W12 MOT	-.07	-.12	.34	.26	.54*	.27	-.02	.04	.39
26. W12 SLFTEST	-.34	.08	.22	.12	.09	.16	.13	.08	-.13
27. W12 SEL MI	-.27	.28	.40*	.31	.26	.17	-.05	.04	.30
28. W12 ST AIDS	-.23	.21	.09	.20	.41	.22	-.25	.01	.19
29. W12 TME MGT	-.28	-.02	.48*	.51*	.28	.16	.04	-.04	.21
30. W12 TESTTAK	-.36	.16	.53**	.52*	.31	.25	.06	.07	.09
31. W4 PER/EMO	-.22	.24	.19	.14	.01	.05	.13	.10	-.01
32. W4 SOCIAL	.04	.14	.11	-.13	.01	-.07	.00	-.09	.00
33. W4ACA	-.11	.06	.37**	.23	.08	-.04	.06	-.05	-.02
34. W4 INST ATT	.03	-.02	-.03	.06	-.16	-.08	.01	-.09	-.25
35. W8 PER/EMO	-.08	.11	.15	.21	.08	.00	.05	.24	.09
36. W8 SOCIAL	.10	-.03	.00	.12	.05	.07	-.10	.13	-.03
37. W8 ACA	-.07	.02	.39**	.38**	.13	-.06	.10	.13	.02
38. W8 INST ATT	.01	.08	-.02	.23	-.08	-.08	.04	.12	-.22
39. W12 PER/EMO	-.09	.02	.12	.16	.08	-.05	.18	.30*	.10
40. W12 SOCIAL	.10	-.03	.00	.12	.19	.11	.01	.03	.18
41. W12 ACA	-.05	-.13	.21	.35*	.11	-.28	.13	.24	.05
42. W12 INST ATT	.08	-.05	.04	.15	.14	-.08	.11	.04	.05
Mean	62.06	961.09	2.71	2.53	2.32	2.54	.95	.92	.86
Standard Deviation	17.22	115.62	.68	.92	.96	.86	.16	.20	.25
Range	69	700	2.92	4.0	3.86	3.67	.50	1.0	1.0

Note. HS RANK = High School Rank; SAT SCORE = SAT Score; SEM1 GPA = Semester 1 Grade Point Average; SEM2 GPA = Semester 2 Grade Point Average; SEM3 GPA = Semester 3 Grade Point Average; SEM4 GPA = Semester 4 Grade Point Average; SEM 1 HRS = Semester 1 Percentage of Hours Passed; SEM2 HRS = Semester 2 Percentage of Hours Passed; SEM3 HRS = Semester 3 Percentage of Hours Passed; SEM4 HRS = Semester 4 Percentage of Hours Passed; W4 ANX = Week 4 LASSI Anxiety score

(table continues)

Table 2 (*continued*).

Variable	10	11	12	13	14	15	16	17	18
1. HS RANK									
2. SAT SCORE									
3. SEM1 GPA									
4. SEM2 GPA									
5. SEM3 GPA									
6. SEM4 GPA									
7. SEM1 HRS									
8. SEM2 HRS									
9. SEM3 HRS									
10. SEM4 HRS	1								
11. W4 ANX	-.02	1							
12. W4 ATT	.03	.23	1						
13. W4 CONCEN	.17	.64**	.66**	1					
14. W4 INFOPRO	-.05	.46*	.47*	.65**	1				
15. W4 MOT	.38	.47*	.68**	.75**	.70**	1			
16. W4 SLFTEST	-.10	.32	.55**	.62**	.82**	.63**	1		
17. W4 SEL MI	.16	.31	.72**	.70**	.55**	.69**	.46*	1	
18. W4 ST AIDS	.21	.42*	.72**	.71**	.72**	.81**	.72**	.70**	1
19. W4 TME MGT	.20	.31	.51**	.69**	.66**	.70**	.57**	.64**	.67**
20. W4 TESTTAK	.24	.56**	.64**	.88**	.56**	.74**	.50*	.79**	.74**
21. W12 ANX	-.08	.73**	.30	.51**	.37	.43*	.32	.32	.36
22. W12 ATT	-.02	-.31	.43*	.17	.16	.19	.14	.22	.02
23. W12 CONCEN	.10	.43*	.70**	.87**	.57**	.67**	.56**	.60**	.62**
24. W12 INFOPRO	.03	.18	.47*	.40*	.68**	.56**	.53**	.32	.52**
25. W12 MOTIV	.23	.11	.48*	.43*	.55**	.61**	.40*	.39	.43*
26. W12 SLFTEST	.03	.55**	.42*	.71**	.69**	.62**	.70**	.39	.68**
27. W12 SEL MI	.28	.21	.65**	.56**	.29	.60**	.23	.82**	.59**
28. W12 ST AIDS	.22	.18	.58**	.45*	.48*	.59**	.39	.48*	.69**
29. W12 TME MGT	.18	.24	.48*	.60**	.48*	.56**	.37	.58**	.49*
30. W12 TESTTAK	.13	.26	.64**	.63**	.35	.63**	.28	.69**	.57**
31. W4 PER/EMO	-.01	.42*	.26	.40	.07	.40*	.21	.11	.27
32. W4 SOCIAL	.00	-.16	.43*	.03	.04	.23	.10	.18	.17
33. W4 ACA	-.12	.03	.36	.26	.20	.41*	.24	.17	.16
34. W4 INST ATT	-.05	.05	.45	.25	.28	.45*	.42*	.33	.37
35. W8 PER/EMO	.09	.27	.02	.43*	-.09	.03	.01	.11	.01
36. W8 SOCIAL	.24	.14	.38	.30	-.06	.06	.04	.23	.26
37. W8 ACA	.06	.15	.31	.35	.03	.17	.15	.19	.13
38. W8 INST ATT	.03	.08	.30	.17	-.02	.15	.22	.17	.18
39. W12 PER/EMO	.05	.23	-.03	.34	-.04	-.08	.03	.01	-.14
40. W12 SOCIAL	.19	.49*	.34	.41*	.04	.12	.04	.11	.07
41. W12 ACA	-.10	.12	.12	.29	.14	.02	.17	.05	-.03
42. W12 INST ATT	.03	.02	.30	.17	.13	.20	.34	.14	.10
Mean	.93	58.64	42.64	53.08	42.52	61.72	47.12	54.32	44.32
Standard Deviation	.16	30.63	25.80	31.28	31.63	30.85	33.30	29.09	31.31
Range	.67	94.00	84.00	94.00	94.00	94.00	94.00	94.00	94.00

Note. W4 ATT = Week 4 LASSI Subscale Attitude Score; W4 CONCEN = Subscale Score; Week 4 LASSI Subscale Concentration Score; W4 INFOPRO = Week 4 LASSI Subscale Information Processing; W4 MOT = Week 4 LASSI Subscale Information Processing Score; W4 SLFTEST = Week 4 LASSI Subscale Self-Testing Score; W4 SEL MI = Week 4 LASSI Subscale Selecting Main Ideas Subscale Score; W4 ST AIDS = Week 4 LASSI Subscale Study Aids Score; W4 TME MGT = Week 4 LASSI Subscale Time

(table continues)

Table 2 (c*ontinued*).

Variable	19	20	21	22	23	24	25	26	27
1. HS RANK									
2. SAT SCORE									
3. SEM1 GPA									
4. SEM2 GPA									
5. SEM3 GPA									
6. SEM4 GPA									
7. SEM1 HRS									
8. SEM2 HRS									
9. SEM3 HRS									
10. SEM4 HRS									
11. W4 ANXIETY									
12. W4 ATTITUDE									
13. W4 CONCEN									
14. W4 INFOPRO									
15. W4 MOT									
16. W4 SLFTEST									
17. W4 SEL MI									
18. W4 ST AIDS									
19. W4 TME MGT	1								
20. W4 TESTTAK	.70**	1							
21. W12 ANX	.14	.54**	1						
22. W12 ATT	.16	.15	.10	1					
23. W12 CONCEN	.61**	.76**	.56**	.51**	1				
24. W12 INFOPRO	.34	.32	.32	.46*	.58**	1			
25. W12 MOTIV	.52**	.40*	.37	.65**	.66**	.76**	1		
26. W12 SLFTEST	.54**	.74**	.59**	.13	.66**	.47*	.46*	1	
27. W12 SEL MI	.41*	.69**	.46*	.40*	.67**	.36	.53**	.30	1
28. W12 ST AIDS	.48*	.55**	.33	.36	.58**	.69**	.72**	.53**	.63**
29. W12 TME MGT	.74**	.66**	.41*	.48*	.72**	.34	.63**	.56**	.64**
30. W12 TESTTAK	.53	.73**	.54**	.47*	.77**	.39	.58**	.49*	.83**
31. W4 PER/EMO	-.04	.33	.55**	.02	.41	.19	.17	.37	.26
32. W4 SOCIAL	.12	.14	-.12	.42*	.13	.15	.24	.03	.23
33. W4 ACA	.20	.24	.33	.60**	.46*	.33	.42*	.28	.32
34. W4 INST ATT	.13	.25	.17	.37	.34	.37	.18	.13	.37
35. W8 PER/EMO	.06	.42*	.29	.03	.40*	-.29	-.15	.36	.20
36. W8 SOCIAL	.27	.42*	.07	.09	.27	-.24	-.12	.09	.28
37. W8 ACA	.17	.37	.31	.47*	.48*	.00	.09	.34	.35
38. W8 INST ATT	-.07	.18	.24	.26	.29	.06	-.07	.04	.31
39. W12 PER/EMO	-.10	.24	.27	.10	.30	-.29	-.16	.30	.00
40. W12 SOCIAL	.17	.33	.43*	.15	.36	-.24	.02	.25	.13
41. W12 ACA	.12	.26	.37	.54**	.50*	.07	.21	.35	.20
42. W12 INST ATT	-.08	.08	.22	.36	.26	.07	-.02	.04	.17
Mean	46.12	49.48	61.72	45.68	56.44	60.28	59.40	51.08	62.68
Standard Deviation	30.40	29.17	31.02	28.05	30.63	31.18	31.63	29.75	28.51
Range	94.00	84.00	98.00	79.00	94.00	94.00	90.00	94.00	94.00

Note. = Management Score; W4 TESTTAK = Week 4 LASSI Subscale Test-Taking Score; W12 ANX = Week 12 LASSI Anxiety Subscale Score; W12 ATT = Week 12 LASSI Subscale Attitude Score; W12 CONCEN = Week 12 LASSI Subscale Concentration Score; W12 INFOPRO = Week 12 LASSI Subscale Information Processing; W12 MOT = Week 12 LASSI Subscale Motivation Score; W12 SLFTEST = Week 12 LASSI Subscale Self-Testing Score; W12 SEL MI = Week 12 LASSI Subscale Selecting Main *(table continues)*

Table 2 (c*ontinued*).

Variable	28	29	30	31	32	33	34	35	36
1. HS RANK									
2. SAT SCORE									
3. SEM1 GPA									
4. SEM2 GPA									
5. SEM3 GPA									
6. SEM4 GPA									
7. SEM1 HRS									
8. SEM2 HRS									
9. SEM3 HRS									
10. SEM4 HRS									
11. W4 ANX									
12. W4 ATT									
13. W4 CONCEN									
14. W4 INFOPRO									
15. W4 MOT									
16. W4 SLFTEST									
17. W4 SEL MI									
18. W4 ST AIDS									
19. W4 TME MGT									
20. W4 TESTTAK									
21. W12 ANX									
22. W12 ATT									
23. W12 CONCEN									
24. W12 INFOPRO									
25. W12 MOTIV									
26. W12 SLFTEST									
27. W12 SEL MI									
28. W12 ST AIDS	1								
29. W12 TME MGT	.57**	1							
30. W12 TESTTAK	.66**	.78**	1						
31. W4 PER/EMO	.04	.07	.31	1					
32. W4 SOCIAL	.20	.05	.20	.32*	1				
33. W4 ACA	.21	.47*	.55**	.59**	.42**	1			
34. W4 INST ATT	.19	.07	.30	.26	.57**	.38**	1		
35. W8 PER/EMO	-.03	.31	.38	.57**	.20	.59**	.11	1	
36. W8 SOCIAL	.17	.25	.32	.24	.65**	.14	.38**	.52**	1
37. W8 ACA	.15	.54**	.56**	.39**	.31*	.66**	.29*	.64**	.46**
38. W8 INST ATT	.03	.00	.23	.35**	.52**	.29*	.77**	.28*	.60**
39. W12 PER/EMO	-.24	.11	.13	.54**	.12	.36**	.09	.83**	.37**
40. W12 SOCIAL	-.04	.34	.27	.28*	.42**	.07	.20	.52**	.77**
41. W12 ACA	.02	.46*	.35	.39**	.15	.47**	.26	.59**	.36**
42. W12 INST ATT	-.11	.02	.14	.34*	.26	.23	.62**	.31*	.40**
Mean	49.52	45.68	57.64	49.20	51.15	52.25	30.27	51.87	50.78
Standard Deviation	30.29	32.39	27.30	9.25	7.12	8.80	3.36	48.11	7.52
Range	94.00	94.00	94.00	45.00	39.00	41.00	10.00	51.15	41.00

Note. Ideas Subscale Score; W12 ST AIDS = Week 12 LASSI Subscale Study Aids Score; W12 TME MGT = Week 12 LASSI Subscale Time Management Score; W12 TESTTAK = Week 12 LASSI Subscale Test-Taking Score; W4 PER/EMO = Week 4 SACQ Personal/Emotional Adjustment Subscale Score, W4 SOCIAL = Week 4 SACQ Subscale Social Adjustment Subscale Score; W4 ACA = Week 4 SACQ Academic Adjustment Score; W4 INST ATT = Week 4 SACQ Institutional Attachment Subscale Score *(table continues)*

Table 2 (c*ontinued*).

Variables	37	38	39	40	41	42
1. HS RANK						
2. SAT SCORE						
3. SEM1 GPA						
4. SEM2 GPA						
5. SEM3 GPA						
6. SEM4 GPA						
7. SEM1 HRS						
8. SEM2 HRS						
9. SEM3 HRS						
10. SEM4 HRS						
11. W4 ANX						
12. W4 ATT						
13. W4 CONCEN						
14. W4 INFOPRO						
15. W4 MOT						
16. W4 SLFTEST						
17. W4 SEL MI						
18. W4 ST AIDS						
19. W4 TME MGT						
20. W4 TESTTAK						
21. W12 ANX						
22. W12 ATT						
23. W12 CONCEN						
24. W12 INFOPRO						
25. W12 MOTIV						
26. W12 SLFTEST						
27. W12 SEL MI						
28. W12 ST AIDS						
29. W12 TME MGT						
30. W12 TESTTAK						
31. W4 PER/EMO						
32. W4 SOCIAL						
33. W4 ACA						
34. W4 INST ATT						
35. W8 PER/EMO						
36. W8 SOCIAL						
37. W8 ACA	1					
38. W8 INST ATT	.40**	1				
39. W12 PER/EMO	.49**	.22	1			
40. W12 SOCIAL	.40**	.35**	.54**	1		
41. W12 ACA	.71**	.38**	.69**	.46**	1	
42. W12 INST ATT	.39**	.72**	.46**	.53**	.52**	1
Mean	51.85	30.00	48.11	50.20	50.22	29.13
Standard Deviation	9.97	3.23	10.61	8.18	30.27	3.60
Range	45	10.00	43.00	37.00	10.00	10.00

Note. W8 PER/EMO = Week 8 SACQ Personal/Emotional Adjustment Subscale Score, W8 SOCIAL = Week 8 SACQ Subscale Social Adjustment Subscale; W8 ACA = Week 8 SACQ Subscale Academic Adjustment Score; W8 INST ATT = Week 8 SACQ Subscale Institutional Attachment Score; W12 PER/EMO = Week 12 SACQ Personal/Emotional Adjustment Subscale Score, W12 SOCIAL = Week 12 SACQ Subscale Social Adjustment Subscale; W12 ACA = Week 12 SACQ Subscale Academic Adjustment Score; W12 INST ATT = Week 12 SACQ Subscale Institutional Attachment Score.

Table 3

Correlation Matrix of Measured Variable for Group 2 (Non-Athletes No PSYC 1000)

Variable	1	2	3	4	5	6	7	8	9
1. HS RANK	1								
2. SAT SCORE	-.05	1							
3. SEM1 GPA	.09	.09	1						
4. SEM2 GPA	-.10	.05	.74**	1					
5. SEM3 GPA	.19	-.12	.53**	.77**	1				
6. SEM4 GPA	.30	-.08	.72**	.68**	.79**	1			
7. SEM1 HRS	.17	-.33*	.58**	.35*	.49**	.68**	1		
8. SEM2 HRS	.02	.11	.39*	.60**	.55**	.30	.12	1	
9. SEM3 HRS	.16	-.15	.22	.50**	.86**	.42*	.31	.61	1
10. SEM4 HRS	.20	-.19	.57**	.32	.63**	.68**	.93**	-.06	.55
11. W4 ANX	.07	.09	-.06	.10	-.02	-.22	-.06	.07	.06
12. W4 ATT	-.11	-.15	.41*	.54**	.42*	.46*	.35	.19	.22
13. W4 CONCEN	-.15	-.18	.10	.41*	.35	.21	.17	.21	.26
14. W4 INFOPRO	.04	-.24	.15	.10	.08	-.02	.26	.14	.09
15. W4 MOT	.04	-.24	.48**	.66**	.68**	.57**	.48**	.49**	.51**
16. W4 SLFTEST	-.07	-.42*	.04	.13	.03	.06	.25	.12	.03
17. W4 SEL MI	-.12	-.09	.07	.08	.05	-.29	.09	.09	.13
18. W4 ST AIDS	.00	-.40*	.30	.43*	.49*	.28	-.38*	.38*	.39
19. W4 TME MGT	.11	-.09	.34	.50**	.47*	.39	.21	.21	.24
20. W4 TESTTAK	.03	-.11	.04	.21	.11	.10	.15	.15	.15
21. W12 ANX	.06	.17	-.05	.07	-.07	-.26	-.01	-.01	-.01
22. W12 ATT	-.01	-.11	.45*	.47**	.28	.31	.19	.19	.16
23. W12 CONCEN	.03	-.31	.16	.27	.16	.26	.01	.01	.02
24. W12 INFOPRO	-.20	-.07	.03	.05	-.10	-.32	.02	.02	-.13
25. W12 MOTIV	.12	-.27	.38*	.57**	.49*	.56**	.36	.36	.35
26. W12 SLFTEST	-.06	-.32	-.01	.03	-.12	.05	-.07	-.07	-.14
27. W12 SEL MI	-.02	-.07	.23	.13	-.04	.02	-.04	-.04	-.03
28. W12 ST AIDS	.05	-.16	.20	.28	.21	.36	.08	.08	.10
29. W12 TM MGT	-.01	-.07	.21	.43*	.27	.24	.11	.11	.08
30. W12 TESTTAK	-.04	-.09	.07	.21	-.03	-.05	.06	.06	.04
31. W4 PER/EMO	-.17	.18	-.03	.29	.21	-.01	.33	.33	.11
32. W4 SOCIAL	.02	-.23	.12	.09	.00	.00	.23	-.08	-.09
33. W4 ACA	-.11	.18	.37*	.53**	.36*	.40*	.29	.27	.15
34. W4 INST ATT	.10	-.28	.07	.01	.02	.30	.29	-.12	-.06
35. W8 PER/EMO	-.14	.04	-.03	.22	.00	-.01	.14	.14	-.10
36. W8 SOCIAL	-.01	-.28	.07	.11	.01	-.23	.05	-.05	-.06
37. W8 ACA	-.14	.11	.55**	.69**	.44*	.48**	.42**	.26	.14
38. W8 INST ATT	.11	-.30	.10	.07	.09	.27	.33*	-.02	.06
39. W12 PER/EMO	-.11	-.02	.17	.28	.11	-.09	-.04	.30	.09
40. W12 SOCIAL	.02	-.23	.13	.17	.14	-.24	.04	.08	.11
41. W12 ACA	.04	-.04	.63**	.64**	.43	.66**	.47**	.28	.14
42. W12 INST ATT	-.06	-.21	-.02	-.08	.03	.03	.22	-.06	.07
Mean	81.08	1097.24	3.17	3.16	3.08	3.19	.97	.97	.93
Standard Deviation	11.77	130.76	.74	.85	.97	.72	.10	.09	.23
Range	41.00	640.00	2.85	2.75	4.00	3.00	.54	.40	1.00

Note. HS RANK = High School Rank; SAT SCORE = SAT Score; SEM1 GPA = Semester 1 Grade Point Average; SEM2 GPA = Semester 2 Grade Point Average; SEM3 GPA = Semester 3 Grade Point Average; SEM4 GPA = Semester 4 Grade Point Average; SEM 1 HRS = Semester 1 Percentage of Hours Passed; SEM2 HRS = Semester 2 Percentage of Hours Passed; SEM3 HRS = Semester 3 Percentage of Hours Passed; SEM4 HRS = Semester 4 Percentage of Hours Passed; W4 ANX = Week 4 LASSI Anxiety score

(table continues)

Table 3 (*continued*).

Variable	10	11	12	13	14	15	16	17	18
1. HS RANK									
2. SAT SCORE									
3. SEM1 GPA									
4. SEM2 GPA									
5. SEM3 GPA									
6. SEM4 GPA									
7. SEM1 HRS									
8. SEM2 HRS									
9. SEM3 HRS									
10. SEM4 HRS	1								
11. W4 ANX	-.03	1							
12. W4 ATT	.41	-.07	1						
13. W4 CONCEN	.18	.20	.54**	1					
14. W4 INFOPRO	.12	.06	.08	.38*	1				
15. W4 MOT	.47*	-.03	.55**	.47**	.52**	1			
16. W4 SLFTEST	.13	-.16	.29	.22	.42*	.39*	1		
17. W4 SEL MI	.02	.51**	.51**	.59**	.55**	.26	.22	1	
18. W4 ST AIDS	.23	-.37*	-.37*	.03	.43*	.59**	.39*	-.09	1
19. W4 TME MGT	.40	.04	.04	.65**	.31	.51**	.11	.16	.26
20. W4 TESTTAK	.13	.59**	.59**	.61**	.27	.33	.26	.65**	-.25
21. W12 ANX	.02	.77**	.77**	.05	-.04	-.12	-.24	.28	-.23
22. W12 ATT	.38	.19	.19	.53**	.37*	.53**	.25	.38*	.08
23. W12 CONCEN	.37	.33	.33	.78**	.43*	.40*	.34	.56*	-.05
24. W12 INFOPRO	-.29	.07	.07	.33	.75**	.24	.35*	.62**	.13
25. W12 MOTIV	.49*	.04	.04	.54**	.49**	.85**	.41*	.31	.47**
26. W12 SLFTEST	.16	-.10	-.10	.42*	.57**	.48**	.60**	.36*	.19
27. W12 SEL MI	.30	.36*	.36*	.38*	.49**	.19	.31	.77**	-.09
28. W12 ST AIDS	.19	-.32	-.32	.33	.42*	.43*	.20	.12	.54**
29. W12 TME MGT	.27	-.00	-.00	.61**	.26	.45*	.16	.12	.18
30. W12 TESTTAK	.07	.61**	.61**	.42*	.38*	.23	.24	.69**	-.12
31. W4 PER/EMO	-.08	.35	.35	.11	-.06	.09	.03	.08	-.10
32. W4 SOCIAL	-.09	.13	.09	.25	.51**	.36*	.32	.24	.18
33. W4 ACA	.15	.29	.28	.62**	.23	.53**	.10	.37*	.37*
34. W4 INST ATT	-.06	.29	.01	-.02	.11	.31	.24	-.12	-.12
35. W8 PER/EMO	.00	.39	.39*	.11	-.02	.14	.02	.11	-.03
36. W8 SOCIAL	-.06	-.23	.21	.16	.55**	.33	.24	.37*	.34
37. W8 ACA	.14	.42*	.26	.47**	.20	.67**	.18	.27	.27
38. W8 INST ATT	.06	.43*	.20	-.05	.05	.30	.22	-.01	-.01
39. W12 PER/EMO	.09	-.23	.51**	.14	.54**	.05	.22	.42*	.04
40. W12 SOCIAL	.11	-.23	.35	.12	.23	.29	.18	.40*	.37*
41. W12 ACA	.14	.44*	.17	.59**	.32	.66**	.21	.31	.31
42. W12 INST ATT	.07	.24	.07	.09	.29	.33	.34	.15	.15
Mean	.97	51.53	42.19	41.16	56.28	61.22	45.69	51.75	38.28
Standard Deviation	.10	28.38	22.23	26.23	24.16	28.10	27.42	25.89	25.66
Range	.46	94.00	80.00	94.00	94.00	98.00	84.00	84.00	79.00

Note. W4 ATT = Week 4 LASSI Subscale Attitude Score; W4 CONCEN = Subscale Score; Week 4 LASSI Subscale Concentration Score; W4 INFOPRO = Week 4 LASSI Subscale Information Processing; W4 MOT = Week 4 LASSI Subscale Information Processing Score; W4 SLFTEST = Week 4 LASSI Subscale Self-Testing Score; W4 SEL MI = Week 4 LASSI Subscale Selecting Main Ideas Subscale Score; W4 ST AIDS = Week 4 LASSI Subscale Study Aids Score; W4 TME MGT = Week 4 LASSI Subscale Time *(table continues)*

Table 3 (c*ontinued*).

Variable	19	20	21	22	23	24	25	26	27
1. HS RANK									
2. SAT SCORE									
3. SEM1 GPA									
4. SEM2 GPA									
5. SEM3 GPA									
6. SEM4 GPA									
7. SEM1 HRS									
8. SEM2 HRS									
9. SEM3 HRS									
10. SEM4 HRS									
11. W4 ANX									
12. W4 ATT									
13. W4 CONCEN									
14. W4 INFOPRO									
15. W4 MOT									
16. W4 SLFTEST									
17. W4 SEL MI									
18. W4 ST AIDS									
19. W4 TME MGT	1								
20. W4 TESTTAK	.18	1							
21. W12 ANX	-.09	.23	1						
22. W12 ATT	.39*	.40*	.31	1					
23. W12 CONCEN	.54**	.60**	.24	.68**	1				
24. W12 INFOPRO	.06	.26	-.03	.32	.24	1			
25. W12 MOTIV	.51**	.39*	-.00	.66**	.50**	.26	1		
26. W12 SLFTEST	.25	.43*	-.06	.44*	.57**	.42*	.46**	1	
27. W12 SEL MI	.02	.61**	.31	.48**	.54**	.56**	.28	.42*	1
28. W12 ST AIDS	.31	-.04	-.20	.34	.25	.38*	.53**	.16	.17
29. W12 TME MGT	.79**	.20	.01	.50**	.67**	.05	.43*	.36*	.10
30. W12 TESTTAK	-.01	.71**	.58**	.53**	.53**	.47**	.39*	.36*	.79**
31. W4 PER/EMO	-.10	.32	.31	.08	.20	-.17	-.03	.12	.07
32. W4 SOCIAL	.15	.28	.15	.55**	.51**	.20	.32	.63**	.34
33. W4 ACA	.43*	.72**	.02	.51**	.51**	.07	.48**	.24	.35
34. W4 INST ATT	-.12	.17	.16	.49**	.21	-.10	.37*	.17	.15
35. W8 PER/EMO	-.11	.30	.46**	.29	.20	-.14	.17	.24	.15
36. W8 SOCIAL	.01	.12	.22	.26	.26	.35	.19	.47**	.22
37. W8 ACA	.38*	.47**	.28	.57**	.49	.02	.54**	.35	.36*
38. W8 INST ATT	-.03	.14	.39*	.41*	.17	-.22	.40*	.01	.22
39. W12 PER/EMO	-.22	.45*	.48**	.30	.22	.23	.09	.02	.40*
40. W12 SOCIAL	-.10	.20	.39*	.35*	.26	.32	.24	.26	.22
41. W12 ACA	.58**	.53**	-.02	.61**	.55**	.15	.65*	.17	.15
42. W12 INST ATT	-.03	.09	.25	.51**	.25	.06	.37*	.20	.16
Mean	36.19	52.97	58.47	41.97	45.25	55.22	59.13	48.31	53.28
Standard Deviation	26.65	23.38	29.63	27.47	24.63	30.51	29.60	25.29	25.30
Range	94.00	80.00	98.00	84.00	74.00	94.00	94.00	89.00	98.00

Note. = Management Score; W4 TESTTAK = Week 4 LASSI Subscale Test-Taking Score; W12 ANX = Week 12 LASSI Anxiety Subscale Score; W12 ATT = Week 12 LASSI Subscale Attitude Score; W12 CONCEN = Week 12 LASSI Subscale Concentration Score; W12 INFOPRO = Week 12 LASSI Subscale Information Processing; W12 MOT = Week 12 LASSI Subscale Motivation Score; W12 SLFTEST = Week 12 LASSI Subscale Self-Testing Score; W12 SEL MI = Week 12 LASSI Subscale Selecting Main *(table continues)*

Table 3 (c*ontinued*).

Variable	28	29	30	31	32	33	34	35	36
1. HS RANK									
2. SAT SCORE									
3. SEM1 GPA									
4. SEM2 GPA									
5. SEM3 GPA									
6. SEM4 GPA									
7. SEM1 HRS									
8. SEM2 HRS									
9. SEM3 HRS									
10. SEM4 HRS									
11. W4 ANX									
12. W4 ATT									
13. W4 CONCEN									
14. W4 INFOPRO									
15. W4 MOT									
16. W4 SLFTEST									
17. W4 SEL MI									
18. W4 ST AIDS									
19. W4 TME MGT									
20. W4 TESTTAK									
21. W12 ANX									
22. W12 ATT									
23. W12 CONCEN									
24. W12 INFOPRO									
25. W12 MOTIV									
26. W12 SLFTEST									
27. W12 SEL MI									
28. W12 ST AIDS	1								
29. W12 TME MGT	.35*	1							
30. W12 TESTTAK	.19	.08	1						
31. W4 PER/EMO	-.35*	.07	.10	1					
32. W4 SOCIAL	.12	.28	.39*	.33*	1				
33. W4 ACA	.15	.40*	.35	.50**	.45**	1			
34. W4 INST ATT	.13	.05	.24	.09	.43**	.30	1		
35. W8 PER/EMO	-.24	.06	.26	.73**	.33*	.45**	.36*	1	
36. W8 SOCIAL	.11	.05	.36*	.23	.78**	.26	.25	.46**	1
37. W8 ACA	.21	.46**	.41*	.46**	.44**	.78**	.34*	.56**	.40*
38. W8 INST ATT	.07	.02	.33	.03	.26	.16	.83**	.29	.19
39. W12 PER/EMO	-.14	-.21	.57**	.50**	.46**	.38*	.27	.62**	.46**
40. W12 SOCIAL	.20	.03	.49**	.21	.65**	.21	.25	.31	.83**
41. W12 ACA	.34	.47**	.38*	.20	.46**	.77**	.34*	.21	.33*
42. W12 INST ATT	.21	.05	.27	-.04	.28	.12	.74**	.19	.27
Mean	36.16	38.03	58.47	45.74	49.05	51.42	30.92	46.32	49.42
Standard Deviation	24.16	29.47	24.23	8.14	6.67	8.15	3.03	8.70	6.68
Range	94.00	89.00	94.00	39.00	28.00	40.00	10.00	40.00	27.00

Note. Ideas Subscale Score; W12 ST AIDS = Week 12 LASSI Subscale Study Aids Score; W12 TME MGT = Week 12 LASSI Subscale Time Management Score; W12 TESTTAK = Week 12 LASSI Subscale Test-Taking Score; W4 PER/EMO = Week 4 SACQ Personal/Emotional Adjustment Subscale Score, W4 SOCIAL = Week 4 SACQ Subscale Social Adjustment Subscale Score; W4 ACA = Week 4 SACQ Academic Adjustment Score; W4 INST ATT = Week 4 SACQ Institutional Attachment Subscale Score

(table continues)

Table 3 (c*ontinued*).

Variables	37	38	39	40	41	42
1. HS RANK						
2. SAT SCORE						
3. SEM1 GPA						
4. SEM2 GPA						
5. SEM3 GPA						
6. SEM4 GPA						
7. SEM1 HRS						
8. SEM2 HRS						
9. SEM3 HRS						
10. SEM4 HRS						
11. W4 ANX						
12. W4 ATT						
13. W4 CONCEN						
14. W4 INFOPRO						
15. W4 MOT						
16. W4 SLFTEST						
17. W4 SEL MI						
18. W4 ST AIDS						
19. W4 TME MGT						
20. W4 TESTTAK						
21. W12 ANX						
22. W12 ATT						
23. W12 CONCEN						
24. W12 INFOPRO						
25. W12 MOTIV						
26. W12 SLFTEST						
27. W12 SEL MI						
28. W12 ST AIDS						
29. W12 TME MGT						
30. W12 TESTTAK						
31. W4 PER/EMO						
32. W4 SOCIAL						
33. W4 ACA						
34. W4 INST ATT						
35. W8 PER/EMO						
36. W8 SOCIAL						
37. W8 ACA	1					
38. W8 INST ATT	.30	1				
39. W12 PER/EMO	.39*	.26	1			
40. W12 SOCIAL	.33*	.27	.60**	1		
41. W12 ACA	.74**	.13	.27	.30	1	
42. W12 INST ATT	.21	.76**	.27	.40*	.08	1
Mean	48.61	30.47	43.45	48.45	48.16	30.29
Standard Deviation	7.95	3.30	7.95	6.75	9.67	3.39
Range	35.00	10.00	35.00	31.00	42.00	10.00

Note. W8 PER/EMO = Week 8 SACQ Personal/Emotional Adjustment Subscale Score, W8 SOCIAL = Week 8 SACQ Subscale Social Adjustment Subscale; W8 ACA = Week 8 SACQ Subscale Academic Adjustment Score; W8 INST ATT = Week 8 SACQ Subscale Institutional Attachment Score; W12 PER/EMO = Week 12 SACQ Personal/Emotional Adjustment Subscale Score, W12 SOCIAL = Week 12 SACQ Subscale Social Adjustment Subscale; W12 ACA = Week 12 SACQ Subscale Academic Adjustment Score; W12 INST ATT = Week 12 SACQ Subscale Institutional Attachment Score.

Table 4

Correlation Matrix of Measured Variable for Group 3 (Athlete PSYC 1000)

Variable	1	2	3	4	5	6	7	8	9
1. HS RANK	1								
2. SAT SCORE	-.20	1							
3. SEM1 GPA	.30	.37*	1						
4. SEM2 GPA	.35*	-.08	.49**	1					
5. SEM3 GPA	.30	-.11	.56**	.83**	1				
6. SEM4 GPA	.35	.26	.59**	.57**	.68**	1			
7. SEM1 HRS	-.06	-.11	-.02	-.15	-.22	-.26	1		
8. SEM2 HRS	.50**	-.07	.36*	.80**	.69**	.48**	-.11	1	
9. SEM3 HRS	.24	-.18	.42*	.66**	.87**	.52**	-.11	.71**	1
10. SEM4 HRS	.32	.37*	.51**	.09	.11	.69**	-.09	.16	-.02
11. W4 ANX	.26	.34*	.02	-.09	-.13	.18	.19	.07	-.11
12. W4 ATT	.42**	.04	.33*	.27	.25	.52**	.00	.13	.07
13. W4 CONCEN	.26	.21	.07	-.02	-.07	.46*	-.17	.00	-.18
14. W4 INFOPRO	.22	.05	-.01	-.08	-.16	-.08	.20	-.08	-.12
15. W4 MOT	.29	-.04	.31	.23	.19	.36	-.13	.08	.11
16. W4 SLFTEST	.30	-.13	.00	-.04	-.11	.16	.04	.06	-.13
17. W4 SEL MI	.13	.27	.06	-.07	-.25	.10	.22	.03	-.16
18. W4 ST AIDS	.05	.15	.24	-.19	-.21	.21	.27	-.29	-.24
19. W4 TME MGT	.17	.00	.17	.21	.19	.37*	-.12	.16	.11
20. W4 TESTTAK	.10	.13	.09	.08	-.12	.22	-.01	.07	-.14
21. W12 ANX	.14	.37*	.05	.02	-.06	.27	.02	.05	-.20
22. W12 ATT	.22	.06	.36*	.07	.20	.25	.10	.02	.05
23. W12 CONCEN	.30	.35*	.34*	.04	.06	.40*	-.15	.03	-.12
24. W12 INFOPRO	.27	-.20	-.04	-.05	.01	.08	-.05	-.04	-.04
25. W12 MOTIV	.20	.14	.44**	.20	.25	.33	-.16	.06	.08
26. W12 SLFTEST	.23	-.14	.16	.14	.17	.15	.06	.21	.14
27. W12 SEL MI	.20	.35*	.20	-.01	-.11	.19	-.03	.04	-.20
28. W12 ST AIDS	.28	.03	.29	.01	.08	.05	.24	-.03	-.02
29. W12 TME MGT	.05	.08	.21	-.13	-.08	.12	-.01	-.17	-.21
30. W12 TESTTAK	.18	.32	.42*	.20	.16	.35	.02	.17	.08
31. W4 PER/EMO	.28	.12	.08	.11	-.00	.22	-.04	.14	-.12
32. W4 SOCIAL	.18	.12	.12	.08	-.07	.29	.08	.02	-.14
33. W4 ACA	.24	.11	.10	-.08	-.18	.24	.18	-.07	-.25
34. W4 INST ATT	.10	.15	.17	.06	-.03	.18	.28	.04	-.10
35. W8 PER/EMO	.02	.25	.09	.00	-.10	.02	.03	.08	-.17
36. W8 SOCIAL	-.13	.04	-.10	-.06	.03	-.22	-.13	-.09	.05
37. W8 ACA	.24	.11	.10	-.08	.05	-.04	.07	.30	.15
38. W8 INST ATT	-.11	-.05	.02	.35*	.33	.15	.10	.24	.21
39. W12 PER/EMO	.16	.31	.31	.08	.03	.12	.05	.14	-.10
40. W12 SOCIAL	-.06	.04	-.10	-.06	.09	-.21	.03	.02	.11
41. W12 ACA	-.03	.15	.17	-.07	-.17	-.44*	.03	.14	-.14
42. W12 INST ATT	-.03	.05	.09	.07	.06	.07	.04	.16	.16
Mean	57.84	887.84	2.54	2.13	1.93	2.38	.99	.86	.80
Standard Deviation	53.	110.33	.53	.96	.95	.85	.03	.21	.32
Range	68.00	590.00	2.30	3.67	3.38	2.93	.20	.75	1.00

Note. HS RANK = High School Rank; SAT SCORE = SAT Score; SEM1 GPA = Semester 1 Grade Point Average; SEM2 GPA = Semester 2 Grade Point Average; SEM3 GPA = Semester 3 Grade Point Average; SEM4 GPA = Semester 4 Grade Point Average; SEM 1 HRS = Semester 1 Percentage of Hours Passed; SEM2 HRS = Semester 2 Percentage of Hours Passed; SEM3 HRS = Semester 3 Percentage of Hours Passed; SEM4 HRS = Semester 4 Percentage of Hours Passed; W4 ANX = Week 4 LASSI Anxiety score *(table continues)*

Table 4 (*continued*).

Variable	10	11	12	13	14	15	16	17	18
1. HS RANK									
2. SAT SCORE									
3. SEM1 GPA									
4. SEM2 GPA									
5. SEM3 GPA									
6. SEM4 GPA									
7. SEM1 HRS									
8. SEM2 HRS									
9. SEM3 HRS									
10. SEM4 HRS	1								
11. W4 ANX	.39*	1							
12. W4 ATT	.30	.30	1						
13. W4 CONCEN	.38*	.63**	.50**	1					
14. W4 INFOPRO	-.08	.38*	.32	.48**	1				
15. W4 MOT	.20	.35*	.59**	.59**	.39*	1			
16. W4 SLFTEST	.21	.22	.14	.29	.49**	.26	1		
17. W4 SEL MI	-.16	.25	.69**	.48**	.43**	.19	.30	1	
18. W4 ST AIDS	-.24	.27	.13	.37*	.49**	.43**	.40*	.26	1
19. W4 TME MGT	.11	.02	.26	.50**	.45**	.57**	.51**	.12	.38*
20. W4 TESTTAK	-.14	.21	.58**	.70**	.28	.50**	.23	.58**	.16
21. W12 ANX	-.20	.41*	.67**	.35*	.14	.14	.18	.55**	-.10
22. W12 ATT	.05	.25	.12	.17	.20	.37*	.07	.15	.23
23. W12 CONCEN	-.12	.39*	.53**	.69**	.42**	.53**	.28	.53**	.43**
24. W12 INFOPRO	-.04	-.13	.16	.41*	.45**	.41**	.35*	.11	.31
25. W12 MOTIV	.08	.21	.20	.40*	.36*	.71**	.19	.24	.30
26. W12 SLFTEST	.14	.07	.26	.23	.24	.37*	.48**	.27	.28
27. W12 SEL MI	-.20	.21	.52**	.43**	.35*	.27	.22	.80**	.25
28. W12 ST AIDS	-.02	.19	.15	.23	.45**	.31	.13	.28	.52**
29. W12 TME MGT	-.21	.12	.22	.31	.27	.35*	.32	.29	.33*
30. W12 TESTTAK	.08	.30	.48**	.41*	.26	.35*	.25	.66**	.27
31. W4 PER/EMO	-.12	.20	.65	.61**	.10	.36	.08	.38*	-.01
32. W4 SOCIAL	-.14	.42*	.45**	.47**	.09	.30	-.00	.22	.28
33. W4 ACA	-.25	.44*	.70**	.77**	.43**	.60**	.31	.58**	.28
34. W4 INST ATT	.29	.36**	.43**	.24	.11	.11	.09	.07	.05
35. W8 PER/EMO	-.17	.08	.52**	.52**	.20	.15	.07	.30	-.08
36. W8 SOCIAL	-.25	.02	-.30	-.05	.02	-.08	.07	.22	-.21
37. W8 ACA	-.03	.30	-.26	.20	.16	.13	.31	.19	.01
38. W8 INST ATT	-.05	-.20	-.23	-.31	-.33*	-.35	.05	-.24	-.24
39. W12 PER/EMO	.05	.48**	.20	.42**	.16	.28	.09	.33*	.04
40. W12 SOCIAL	-.52**	.06	-.13	.02	.13	.09	.16	-.08	-.09
41. W12 ACA	-.55**	.25	-.04	.05	.04	-.09	-.01	.27	-.16
42. W12 INST ATT	.13	-.12	-.07	-.08	-.15	-.23	.13	-.10	-.10
Mean	.92	46.14	30.51	41.86	32.68	42.05	19.73	32.97	36.35
Standard Deviation	.18	27.40	27.97	27.63	23.91	31.07	19.56	25.06	21.99
Range	.67	98.00	84.00	94.00	74.00	98.00	84.00	94.00	79.00

Note. W4 ATT = Week 4 LASSI Subscale Attitude Score; W4 CONCEN = Subscale Score; Week 4 LASSI Subscale Concentration Score; W4 INFOPRO = Week 4 LASSI Subscale Information Processing; W4 MOT = Week 4 LASSI Subscale Information Processing Score; W4 SLFTEST = Week 4 LASSI Subscale Self-Testing Score; W4 SEL MI = Week 4 LASSI Subscale Selecting Main Ideas Subscale Score; W4 ST AIDS = Week 4 LASSI Subscale Study Aids Score; W4 TME MGT = Week 4 LASSI Subscale Time *(table continues)*

Table 4 (c*ontinued*).

Variable	19	20	21	22	23	24	25	26	27
1. HS RANK									
2. SAT SCORE									
3. SEM1 GPA									
4. SEM2 GPA									
5. SEM3 GPA									
6. SEM4 GPA									
7. SEM1 HRS									
8. SEM2 HRS									
9. SEM3 HRS									
10. SEM4 HRS									
11. W4 ANX									
12. W4 ATT									
13. W4 CONCEN									
14. W4 INFOPRO									
15. W4 MOT									
16. W4 SLFTEST									
17. W4 SEL MI									
18. W4 ST AIDS									
19. W4 TME MGT	1								
20. W4 TESTTAK	.35*	1							
21. W12 ANX	.09	.44**	1						
22. W12 ATT	.20	.15	.25	1					
23. W12 CONCEN	.44**	.45**	.60**	.35*	1				
24. W12 INFOPRO	.55**	.20	.00	.34*	.36*	1			
25. W12 MOTIV	.32	.28	.30	.68**	.60**	.45**	1		
26. W12 SLFTEST	.48**	.26	.15	.26	.36*	.69**	.37*	1	
27. W12 SEL MI	.16	.44**	.57**	.37*	.70**	.35*	.53**	.48**	1
28. W12 ST AIDS	.09	.05	.01	.54**	.40*	.43**	.48**	.53**	.49**
29. W12 TME MGT	.53**	.26	.42**	.44**	.66**	.49**	.54	.34*	.54**
30. W12 TESTTAK	.29	.52**	.65**	.43**	.74**	.15	.57**	.34*	.75**
31. W4 PER/EMO	.20	.66**	.48**	-.09	.45**	.24	.21	.29	.42*
32. W4 SOCIAL	.13	.32	.12	.04	.23	.07	.06	.02	.10
33. W4 ACA	.43**	.67**	.49**	.38*	.67**	.32	.42*	.37*	.46**
34. W4 INST ATT	.43**	.25	.18	.11	.06	.01	-.07	.06	-.06
35. W8 PER/EMO	.18	.59**	.37*	-.05	.34*	.23	.12	.26	.30
36. W8 SOCIAL	.09	-.03	.11	-.03	.02	.17	.10	.06	-.04
37. W8 ACA	.19	.41*	.24	-.26	.14	.04	.02	.19	.08
38. W8 INST ATT	.20	-.09	.05	-.27	-.32	-.33	-.36*	-.13	-.34*
39. W12 PER/EMO	.18	.48**	.43**	.10	.46**	.15	.36*	.17	.42**
40. W12 SOCIAL	.33*	-.03	.12	-.09	.16	.13	.07	.10	-.04
41. W12 ACA	.03	.19	.28	-.26	.16	.07	-.04	.13	.38*
42. W12 INST ATT	-.12	-.01	-.06	-.27	-.22	-.16	-.18	.00	-.23
Mean	36.27	43.62	53.43	31.81	49.00	41.59	41.89	30.24	40.68
Standard Deviation	26.81	26.17	24.72	28.24	29.92	29.09	29.85	28.08	26.54
Range	84.00	84.00	94.00	84.00	94.00	94.00	98.00	89.00	98.00

Note. = Management Score; W4 TESTTAK = Week 4 LASSI Subscale Test-Taking Score; W12 ANX = Week 12 LASSI Anxiety Subscale Score; W12 ATT = Week 12 LASSI Subscale Attitude Score; W12 CONCEN = Week 12 LASSI Subscale Concentration Score; W12 INFOPRO = Week 12 LASSI Subscale Information Processing; W12 MOT = Week 12 LASSI Subscale Motivation Score; W12 SLFTEST = Week 12 LASSI Subscale Self-Testing Score; W12 SEL MI = Week 12 LASSI Subscale Selecting Main *(table continues)*

Table 4 (c*ontinued*).

Variable	28	29	30	31	32	33	34	35	36
1. HS RANK									
2. SAT SCORE									
3. SEM1 GPA									
4. SEM2 GPA									
5. SEM3 GPA									
6. SEM4 GPA									
7. SEM1 HRS									
8. SEM2 HRS									
9. SEM3 HRS									
10. SEM4 HRS									
11. W4 ANX									
12. W4 ATT									
13. W4 CONCEN									
14. W4 INFOPRO									
15. W4 MOT									
16. W4 SLFTEST									
17. W4 SEL MI									
18. W4 ST AIDS									
19. W4 TME MGT									
20. W4 TESTTAK									
21. W12 ANX									
22. W12 ATT									
23. W12 CONCEN									
24. W12 INFOPRO									
25. W12 MOTIV									
26. W12 SLFTEST									
27. W12 SEL MI									
28. W12 ST AIDS	1								
29. W12 TME MGT	.34*	1							
30. W12 TESTTAK	.28	.63**	1						
31. W4 PER/EMO	-.00	.24	.43**	1					
32. W4 SOCIAL	.03	.03	.22	.50**	1				
33. W4 ACA	.36*	.48**	.57**	.58**	.58**	1			
34. W4 INST ATT	-.07	-.04	.09	.44**	.64**	.49**	1		
35. W8 PER/EMO	.06	.19	.35*	.77**	.32	.48**	.49**	1	
36. W8 SOCIAL	-.01	.04	-.03	.07	-.47**	-.16	-.17	.15	1
37. W8 ACA	-.13	.01	.25	.48**	-.03	.19	.06	.46**	.39*
38. W8 INST ATT	-.42*	-.19	-.09	.04	-.10	-.19	.37*	.13	.08
39. W12 PER/EMO	.01	.30	.47**	.66**	.34*	.38*	.32	.60**	-.18
40. W12 SOCIAL	-.18	.13	.04	.14	-.47**	-.09	-.07	.23	.59**
41. W12 ACA	-.23	.06	.30	.31	-.11	.03	.03	.41**	-.03
42. W12 INST ATT	-.05	-.08	-.04	-.01	.11	.03	.22	.05	-.02
Mean	46.30	42.65	42.46	49.38	51.73	49.89	29.81	45.19	35.84
Standard Deviation	31.47	29.12	28.50	10.84	8.15	10.31	2.96	8.13	4.23
Range	98.00	94.00	89.00	43.00	37.00	49.00	10.00	38.00	19.00

Note. Ideas Subscale Score; W12 ST AIDS = Week 12 LASSI Subscale Study Aids Score; W12 TME MGT = Week 12 LASSI Subscale Time Management Score; W12 TESTTAK = Week 12 LASSI Subscale Test-Taking Score; W4 PER/EMO = Week 4 SACQ Personal/Emotional Adjustment Subscale Score, W4 SOCIAL = Week 4 SACQ Subscale Social Adjustment Subscale Score; W4 ACA = Week 4 SACQ Academic Adjustment Score; W4 INST ATT = Week 4 SACQ Institutional Attachment Subscale Score *(table continues)*

Table 4 (c*ontinued*).

Variables	37	38	39	40	41	42
1. HS RANK						
2. SAT SCORE						
3. SEM1 GPA						
4. SEM2 GPA						
5. SEM3 GPA						
6. SEM4 GPA						
7. SEM1 HRS						
8. SEM2 HRS						
9. SEM3 HRS						
10. SEM4 HRS						
11. W4 ANX						
12. W4 ATT						
13. W4 CONCEN						
14. W4 INFOPRO						
15. W4 MOT						
16. W4 SLFTEST						
17. W4 SEL MI						
18. W4 ST AIDS						
19. W4 TME MGT						
20. W4 TESTTAK						
21. W12 ANX						
22. W12 ATT						
23. W12 CONCEN						
24. W12 INFOPRO						
25. W12 MOTIV						
26. W12 SLFTEST						
27. W12 SEL MI						
28. W12 ST AIDS						
29. W12 TME MGT						
30. W12 TESTTAK						
31. W4 PER/EMO						
32. W4 SOCIAL						
33. W4 ACA						
34. W4 INST ATT						
35. W8 PER/EMO						
36. W8 SOCIAL						
37. W8 ACA	1					
38. W8 INST ATT	.21	1				
39. W12 PER/EMO	.24	.02	1			
40. W12 SOCIAL	.39*	.16	.27	1		
41. W12 ACA	.34*	-.08	.40*	.34*	1	
42. W12 INST ATT	.01	.32	.03	-.13	-.26	1
Mean	32.81	25.78	42.51	33.89	32.81	25.11
Standard Deviation	4.46	1.29	7.93	5.27	4.46	.46
Range	19.00	4.00	32.00	25.00	19.00	2.00

Note. W8 PER/EMO = Week 8 SACQ Personal/Emotional Adjustment Subscale Score, W8 SOCIAL = Week 8 SACQ Subscale Social Adjustment Subscale; W8 ACA = Week 8 SACQ Subscale Academic Adjustment Score; W8 INST ATT = Week 8 SACQ Subscale Institutional Attachment Score; W12 PER/EMO = Week 12 SACQ Personal/Emotional Adjustment Subscale Score, W12 SOCIAL = Week 12 SACQ Subscale Social Adjustment Subscale; W12 ACA = Week 12 SACQ Subscale Academic Adjustment Score; W12 INST ATT = Week 12 SACQ Subscale Institutional Attachment Score.

Table 5

Adjusted Means and Standard Deviations for Groups of Freshmen GPA's across their First Two Years of College with High School Rank as a Covariate

	Group 1 (N = 55)	Group 2 (N = 38)	Group 3 (N = 37)	Group 4 (N = 30)
Variables	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
GPA				
Sem 1	2.87 (.51)	3.17 (.75)	2.66 (.49)	2.85 (.64)
Sem 2	2.70 (.72)	3.14 (.73)	2.39 (.88)	2.85 (.75)
Sem 3	2.58 (.83)	3.15 (.63)	2.30 (.80)	2.66 (.77)
Sem 4	2.60 (.88)	3.14 (.73)	2.43 (.85)	3.13 (.70)

Note. Group 1 = Non-Athlete PSYC 1000; Group 2 = Non-Athlete No PSYC 1000; Group 3 = Athlete PSYC 1000; Group 4 = Athlete No PSYC 1000. The covariate was not significant F (3, 111) = 2.65, p = .053 and the Group x Time interaction was not significant F (9, 271) = 1.54, p = .14, partial η^2 = .04.

Table 6

Means and Standard Deviations of Percentage of Hours Passed for Groups of Freshmen across their First Two Years of College

	Group 1 (N = 55)	Group 2 (N = 38)	Group 3 (N = 37)	Group 4 (N = 30)
Variables	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
Hrs Passed				
Sem 1	.98 (.09)	.97 (.11)	.99 (.04)	.97 (.08)
Sem 2	.96 (.13)	.98 (.08)	.89 (.17)	.98 (.06)
Sem 3	.90 (.17)	.98 (.07)	.88 (.23)	.94 (.10)
Sem 4	.93 (.16)	.97 (.10)	.92 (.18)	.99 (.14)

Note. Group 1 = Non-Athlete PSYC 1000; Group 2 = Non-Athlete No PSYC 1000; Group 3 = Athlete PSYC 1000; Group 4 = Athlete No PSYC 1000. The Time by Group interaction was not significant F (9, 278) = 1.69, p = .09, partial η^2 = .04.

Table 7
Chi Square Analyses for Retention of the Four Groups

	Group 1 (*N* = 55)	Group 2 (*N* = 38)	Group 3 (*N* = 37)	Group 4 (*N* = 30)	
					χ^2
Second Semester					
Not Enrolled	8	7	3	0	6.72
Enrolled	47	31	34	30	
Third Semester					
Not Enrolled	13	6	3	0	10.44*
Enrolled	42	32	34	30	
Fourth Semester					
Not Enrolled	17	10	8	0	11.47**
Enrolled	38	28	29	30	

Note. Group 1 = Non-Athlete PSYC 1000; Group 2 = Non-Athlete No PSYC 1000; Group 3 = Athlete PSYC 1000; Group 4 = Athlete No PSYC 1000.
* $p < .05$
** $p < .01$

Table 8
Repeated Measures Analysis of Variance for Reported use of Study Strategies

LASSI Subscales	Group 1 (N = 25) *M (SD)*	Group 2 (N = 32) *M (SD)*	Group 3 (N = 37) *M (SD)*	F	Partial η^2
Anxiety				.34	.007
Week 4	58.64 (30.63)	51.53 (28.38)	46.14 (27.40)		
Week 12	61.72 (31.02)	58.47 (29.63)	53.43 (24.72)		
Attitude				.11	.002
Week 4	42.64 (25.80)	42.19 (22.82)	30.51 (27.97)		
Week 12	45.68 (28.05)	41.97 (27.48)	31.81 (28.24)		
Concentration				.36	.008
Week 4	53.08 (31.28)	41.16 (26.23)	41.86 (27.63)		
Week 12	56.44 (30.63)	45.25 (24.63)	49.00 (29.91)		
Selecting Main Ideas				1.52	.032
Week 4	54.32 (29.09)	51.75 (25.89)	32.97 (25.06)		
Week 12	62.68 (28.51)	53.28 (25.13)	40.68 (26.54)		
Motivation				.09	.002
Week 4	61.72 (30.85)	61.22 (28.10)	42.05 (31.07)		
Week 12	59.40 (31.63)	59.13 (29.60)	41.89 (29.85)		
Information Processing				4.07*	.082
Week 4	42.52 (31.63)	56.28 (24.16)	32.68 (23.91)		
Week 12	60.28 (31.18)	55.22 (30.51)	41.59 (29.09)		
Test-Taking				1.44	.03
Week 4	49.48 (29.17)	52.97 (23.38)	43.62 (26.17)		
Week 12	57.64 (27.30)	58.47 (24.23)	42.46 (28.50)		
Time Management				.70	.015
Week 4	46.12 (30.40)	36.19 (26.65)	36.27 (26.81)		
Week 12	45.68 (32.39)	38.03 (29.47)	42.65 (29.12)		
Study Aids				1.94	.04
Week 4	44.32 (31.31)	38.28 (25.66)	36.35 (21.99)		
Week 12	49.52 (30.29)	36.16 (24.16)	46.30 (31.47)		
Self-Testing				1.01	.02
Week 4	47.12 (33.30)	45.69 (27.42)	19.73 (19.56)		
Week 12	51.08 (29.75)	48.31 (25.29)	30.24 (28.08)		

Note. Group 1 = Non-Athlete PSYC 1000; Group 2 = Non-Athlete No PSYC 1000; Group 3 = Athlete PSYC 1000. Scores are based on percentiles and range from 0 to 99; higher scores indicate better study strategies in that particular area.
** $p < .05$*
*** $p < .01$*
**** $p < .001$*

Table 9
Repeated Measures Analysis of Variance for Adjustment to College

SACQ Subscales	Group 1 (N = 25) *M (SD)*	Group 2 (N = 32) *M (SD)*	Group 3 (N = 37) *M (SD)*	F	Partial η^2
Academic				22.58***	.27
Week 4	52.46 (8.74)	51.42 (8.15)	49.89 (10.31)		
Week 8	51.85 (9.97)	48.61 (7.95)	32.81 (4.46)		
Week 12	50.19 (11.44)	48.16 (9.69)	30.73 (4.42)		
Personal/Emotional				4.11**	.06
Week 4	49.20 (9.25)	45.74 (8.14)	49.38 (10.84)		
Week 8	51.87 (10.87)	46.32 (8.70)	45.19 (8.13)		
Week 12	48.11 (10.61)	43.45 (7.95)	42.51 (7.93)		
Social				25.50***	.29
Week 4	51.15 (7.12)	49.05 (6.67)	51.73 (8.15)		
Week 8	50.78 (7.52)	49.42 (6.68)	35.84 (4.23)		
Week 12	50.20 (8.18)	48.45 (6.75)	33.89 (5.27)		
Institutional Attachment				16.54***	.21
Week 4	30.27 (3.36)	30.92 (3.03)	29.81 (2.96)		
Week 8	30.00 (3.23)	30.47 (3.30)	25.78 (1.29)		
Week 12	29.13 (3.60)	30.29 (3.39)	25.11 (.46)		

Note: Group 1 = Non-Athlete PSYC 1000; Group 2 = Non-Athlete No PSYC 1000; Group 3 = Athlete PSYC 1000. Presented values are T-scores and range from < 25 to > 75; higher scores indicate better adjustment.
* $p < .05$
** $p < .01$
*** $p < .001$

Table 10

Stepwise Regression Analyses for Variables Predicting GPA's for the Non-Athletes who Took PSYC 1000 (Group 1) N = 24

Variable	*B*	*SE B*	β
First Semester GPA			
Step 1			
High School Rank	-.021	.009	-.442*
Step 2			
High School Rank	-.015	.008	-.325
Week 12 Concentration	.010	.004	.428*
Second Semester GPA			
Step 1			
High School Rank	-.03	.01	-.57**
Step 2			
High School Rank	-.035	.010	-.603**
Week 12 Attitude	.015	.006	.421*
Third Semester GPA			
Step 1			
High School Rank	-.022	.011	-.423
Step 2			
High School Rank	-.021	.009	-.414*
Week 12 Motivation	.014	.005	.524*
Step 3			
High School Rank	-.028	.008	-.544**
Week 12 Motivation	.019	.005	.688**
Week 12 Anxiety	-.012	.005	-.468*
Fourth Semester GPA			
Step 1			
High School Rank	-.025	.011	-.467*

Note. First Semester GPA: R^2 = .20* for Step 1; ΔR^2 = .17* for Step 2. Second Semester GPA: R^2 = 32** for Step 1; ΔR^2 = .18* for Step 2. Third Semester GPA: R^2 = .18 for Step 1; ΔR^2 = .28*; ΔR^2 = .18* for Step 3. Fourth Semester GPA: R^2 = .22* for Step 1.

* p < .05

** p < .01

***p < .001

Table 11
Stepwise Regression Analyses for Variables Predicting GPA's for the Non-Athletes who did not Take PSYC 1000 (Group 2) N = 32

Variables	*B*	*SE B*	β
First Semester GPA			
Step 1			
High School Rank	.005	.012	.078
Step 2			
High School Rank	.007	.010	.106
Week 12 Academic Adjustment	.042	.012	.558**
Second Semester GPA			
Step 1			
High School Rank	-.002	.013	-.032
Step 2			
High School Rank	-.008	.011	-.122
Week 12 Motivation	.016	.004	.589**
Third Semester GPA			
Step 1			
High School Rank	.023	.018	.247
Step 2			
High School Rank	.014	.017	.149
Week 12 Motivation	.016	.006	.460*
Step 3			
High School Rank	.009	.016	.099
Week 12 Motivation	.023	.007	.654*
Week 12 Self-Testing Skills	-.017	.008	-.408**
Fourth Semester GPA			
Step 1			
High School Rank	.021	.013	.342
Step 2	.024	.010	.384*
High School Rank	.055	.013	.638**
Week 12 Academic Adjustment			

Note. First Semester GPA: R^2 = .01 for Step 1; ΔR^2 = .31** for Step 2. Second Semester GPA: R^2 = .00 for Step 1; ΔR^2 = .34** for Step 2. Third Semester GPA: R^2 = .06 for Step 1; ΔR^2 = .20*; ΔR^2 = .13* for Step 3. Fourth Semester GPA: R^2 = .12 for Step 1; ΔR^2 = .41** for Step 2.
* $p < .05$
** $p < .01$
***$p < .001$

Table 12
Stepwise Regression Analyses for Variables Predicting GPA's for Student-Athletes who took PSYC 1000 (Group 3) N = 37

Variables	*B*	*SE B*	β
First Semester GPA			
Step 1			
High School Rank	.011	.006	.297
Step 2			
High School Rank	.008	.006	.218
Week 12 Motivation	.007	.003	.396*
Step 3			
High School Rank	.011	.005	.288
Week 12 Motivation	.010	.003	.550**
Week 12 Information Processing	-.007	.003	-.369*
Second Semester GPA			
Step 1			
High School Rank	.023	.010	.347*
Third Semester GPA			
Step 1			
High School Rank	.019	.011	.295
Fourth Semester GPA			
Step 1			
High School Rank	.022	.011	.350
Step 2			
High School Rank	.024	.010	.383*
Week 12 Academic Adjustment	-.100	.034	-.468**
Step 3			
High School Rank	.020	.009	.327*
Week 12 Academic Adjustment	-.123	.031	-.574**
Week 12 Test-Taking Skills	.013	.004	.433**

Note. First Semester GPA: R^2 = .09 for Step 1; ΔR^2 = .15* for Step 2; ΔR^2 = .10* for Step 3. Second Semester GPA: R^2 = .12*. Third Semester GPA: R^2 = .09. Fourth Semester GPA: R^2 = .12 for Step 1; ΔR^2 = .11** for Step 2; ΔR^2 = .17** for Step 3.
* $p < .05$
** $p < .01$
**$p < .001$

Table 13
Stepwise Regression Analyses for Week 12 Academic Adjustment

Variables	*B*	*SE B*	β
Non-Athletes who Took PSYC 1000 (Group 1) *N* = 24			
Step 1			
High School Rank	-.116	.174	-.141
Step 2			
High School Rank	-.180	.148	-.219
Week 12 Attitude	.263	.084	.564**
Non-Athletes who Did not Take PSYC 1000 (Group 2) *N* = 32			
Step 1			
High School Rank	-.043	.153	-.051
Step 2			
High School Rank	-.112	.118	-.133
Week 12 Motivation	.208	.044	.662**
Student-Athletes who Took PSYC 1000 (Group 3) *N* = 37			
Step 1			
High School Rank	-.010	.051	-.033
Step 2			
High School Rank	-.034	.049	-.113
Week 12 Selecting Main Ideas	.068	.027	.406*
Step 3			
High School Rank	-.004	.044	-.012
Week 12 Selecting Main Ideas	.108	.026	.649**
Week 12 Study Aids	-.076	.023	-.539**

Note. Group 1 Week 12 Academic Adjustment: R^2 = .02 for Step 1; ΔR^2 = .31** for Step 2. Group 2 Week 12 Academic Adjustment: R^2 = .00 for Step 1; ΔR^2 = .44** for Step 2. Group 3 Week 12 Academic Adjustment: R^2 = .001 for Step 1; ΔR^2 = .16*** for Step 2; ΔR^2 = .21** for Step 3.
* $p < .05$
** $p < .01$
**$p < .001$

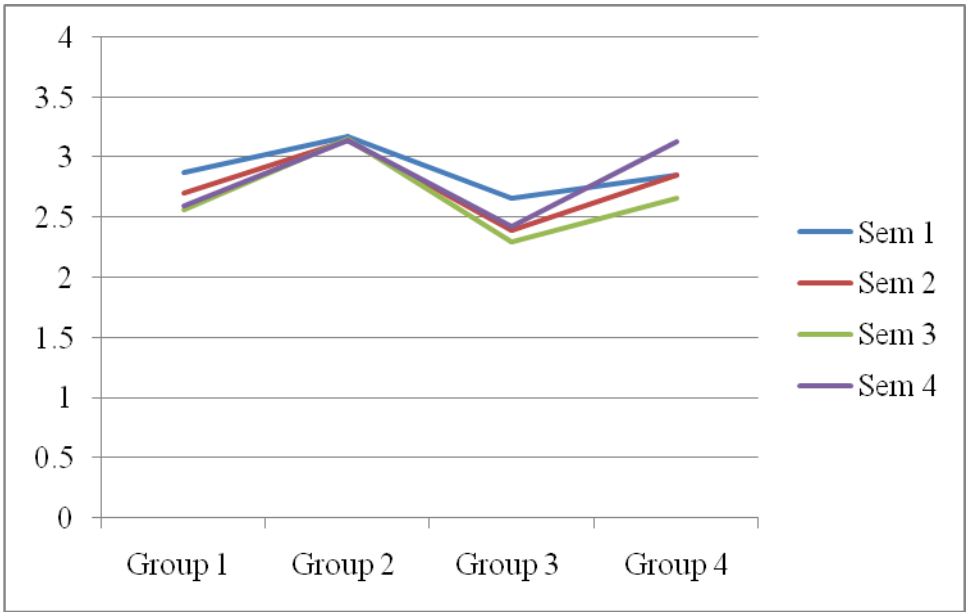

Figure 1. Adjusted means for groups of freshmen GPA's over the course of their first two years of college with high school rank as a covariate. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000; Group 4 = Athlete no PSYC 1000.

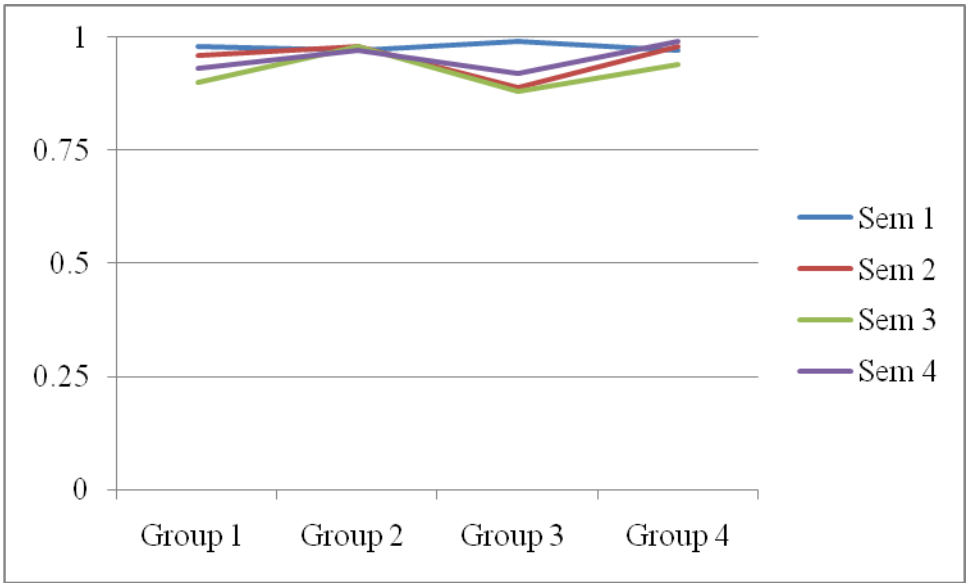

Figure 2. Means for percentage of hours passed for groups of freshmen over the course of their first two years of college. Group 1: Non-athlete PSYC 1000; Group 2 = Non-Athlete no PSYC 1000; Group 3: Athlete PSYC 1000; Group 4: Athlete no PSYC 1000.

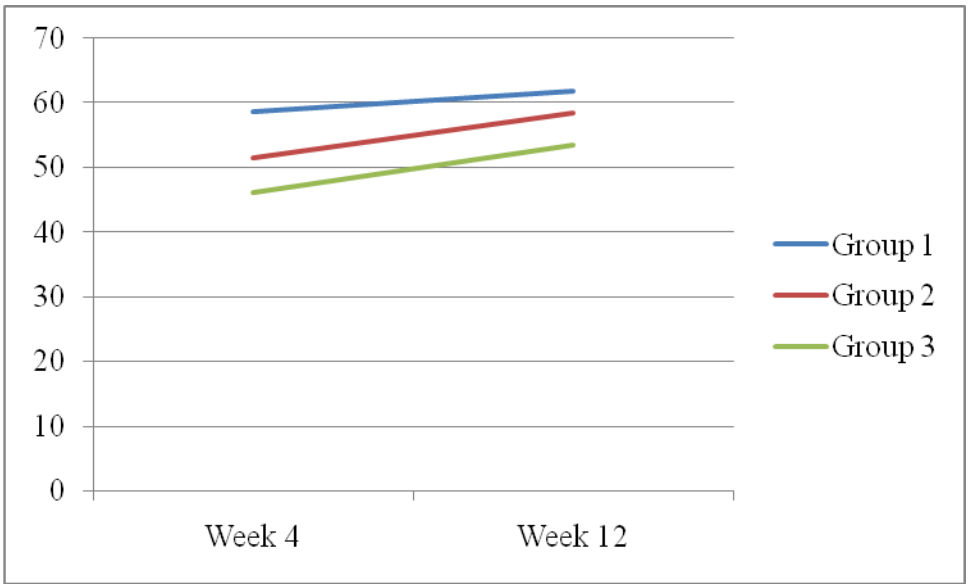

Figure 3. Group scores on LASSI anxiety subscale over the course of the first semester of college. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000.

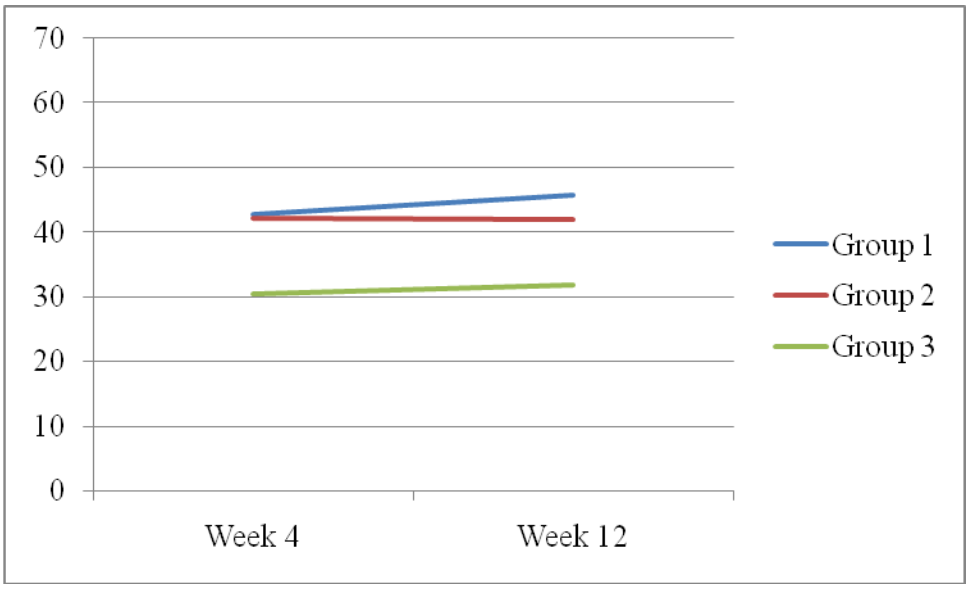

Figure 4. Group scores on LASSI attitude subscale over the course of the first semester of college. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000.

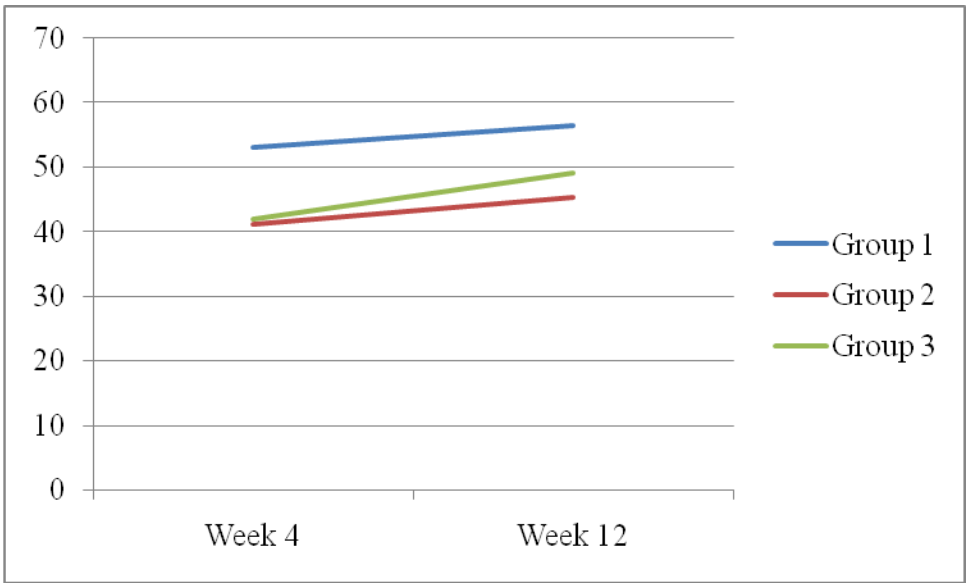

Figure 5. Group scores on LASSI concentration subscale over the course of the first semester of college. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000.

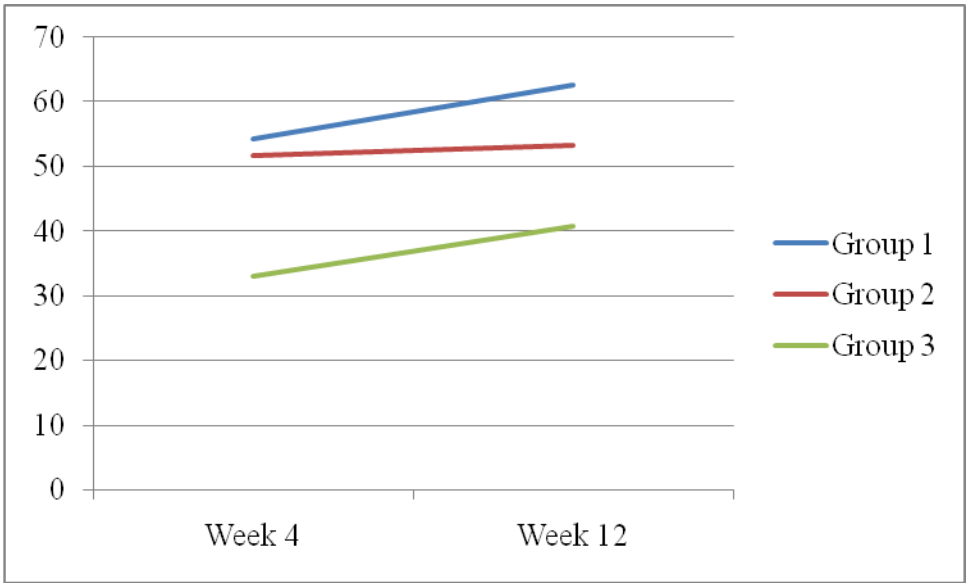

Figure 6. Group scores on LASSI selecting main ideas subscale over the course of the first semester of college. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000.

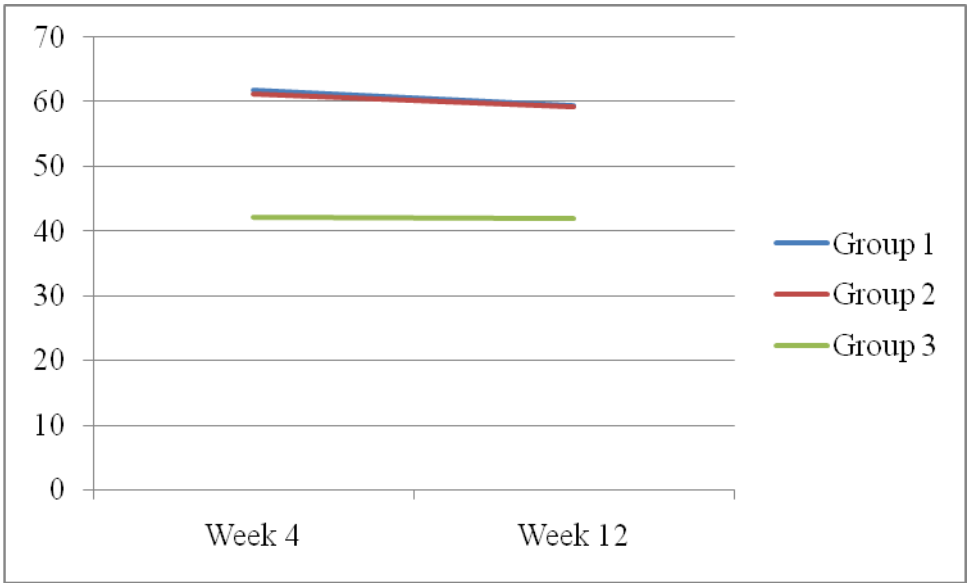

Figure 7. Group scores on LASSI motivation subscale over the course of the first semester of college. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000.

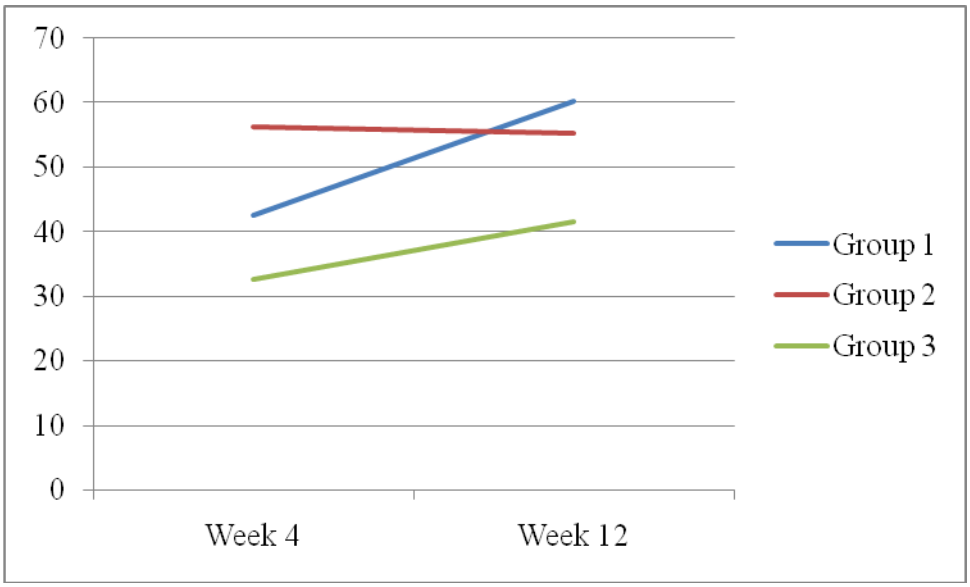

Figure 8. Group scores on LASSI information processing subscale over the course of the first semester of college. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000.

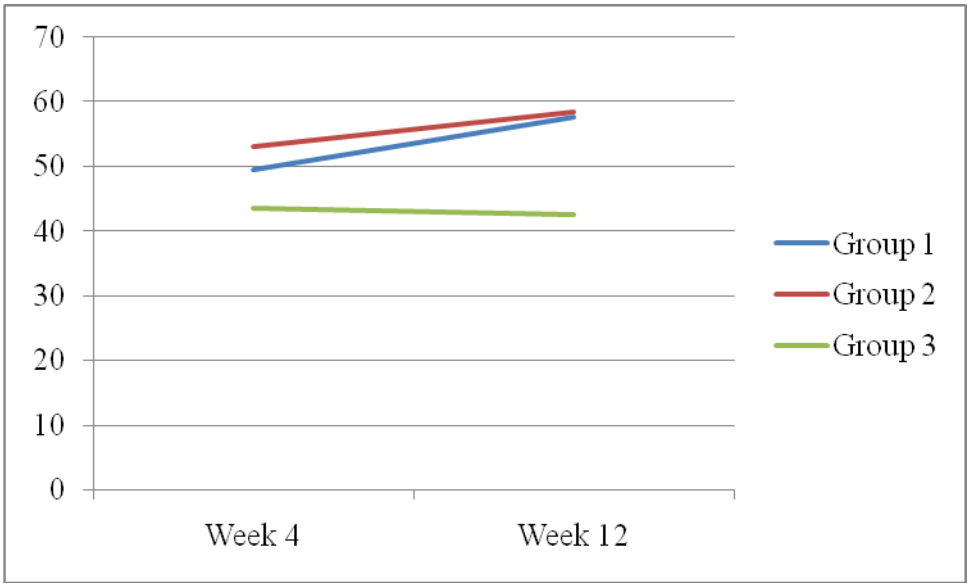

Figure 9. Group scores on LASSI test-taking subscale over the course of the first semester of college. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000.

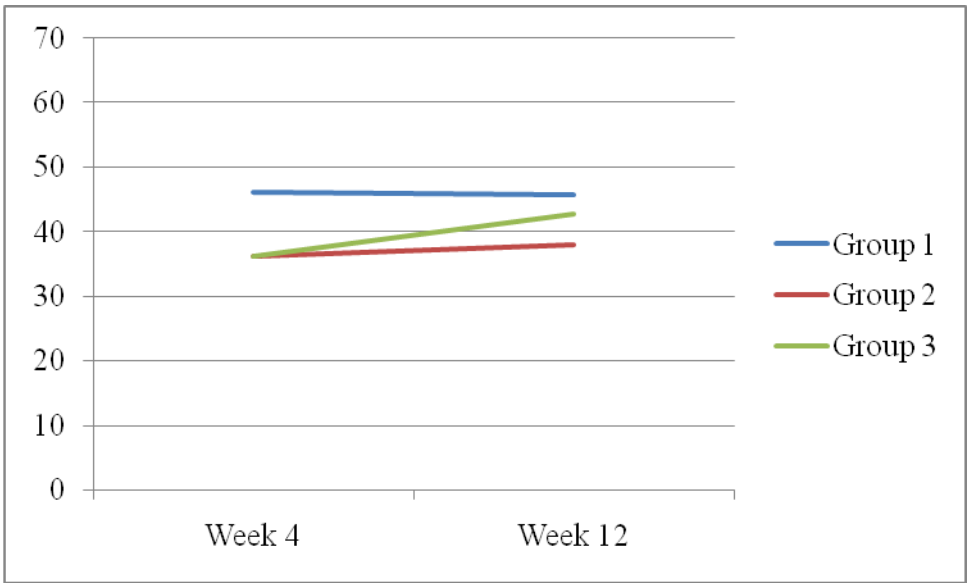

Figure 10. Group scores on LASSI time management subscale over the course of the first semester of college. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000. .

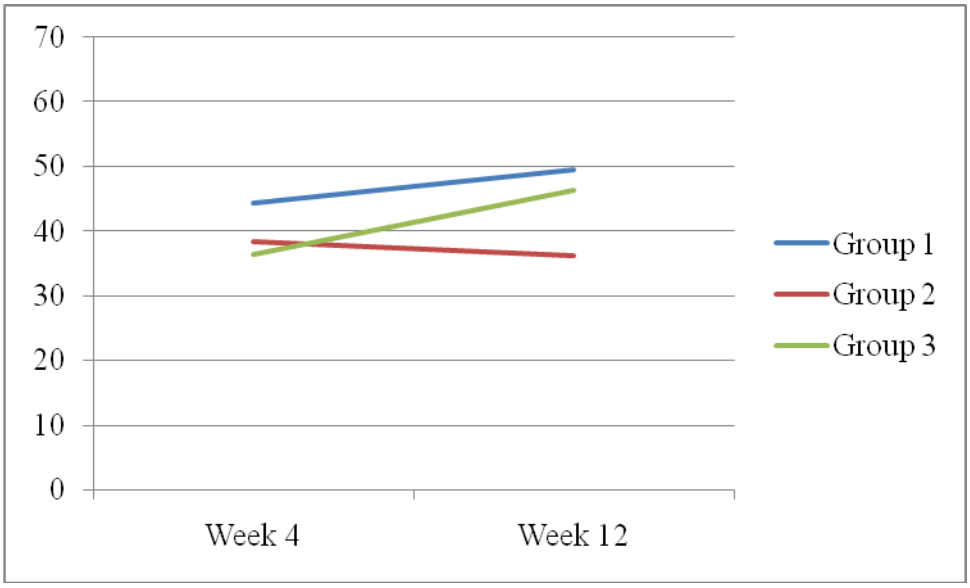

Figure 11. Group scores on LASSI study aids subscale over the course of the first semester of college. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000.

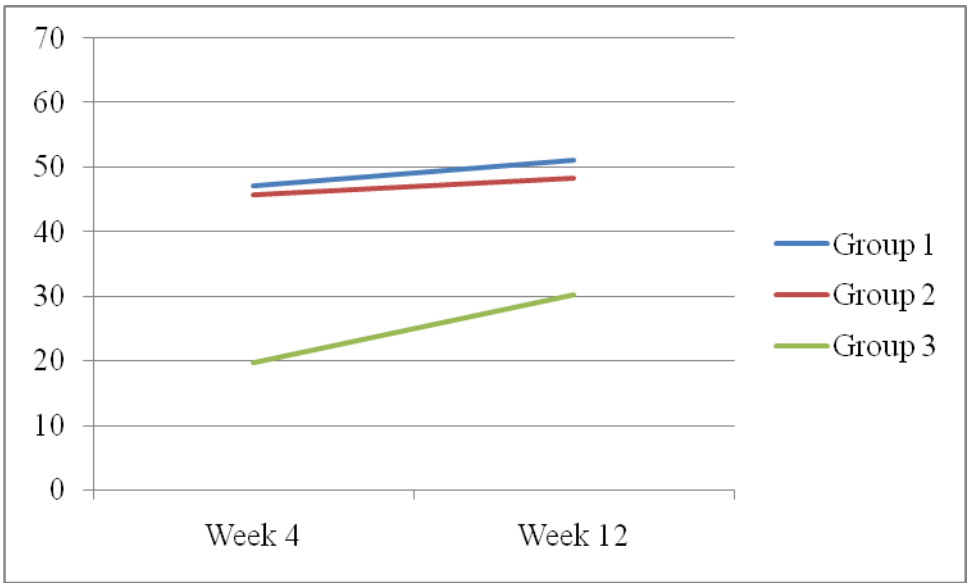

Figure 12. Group scores on LASSI self-testing subscale over the course of the first semester of college. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000.

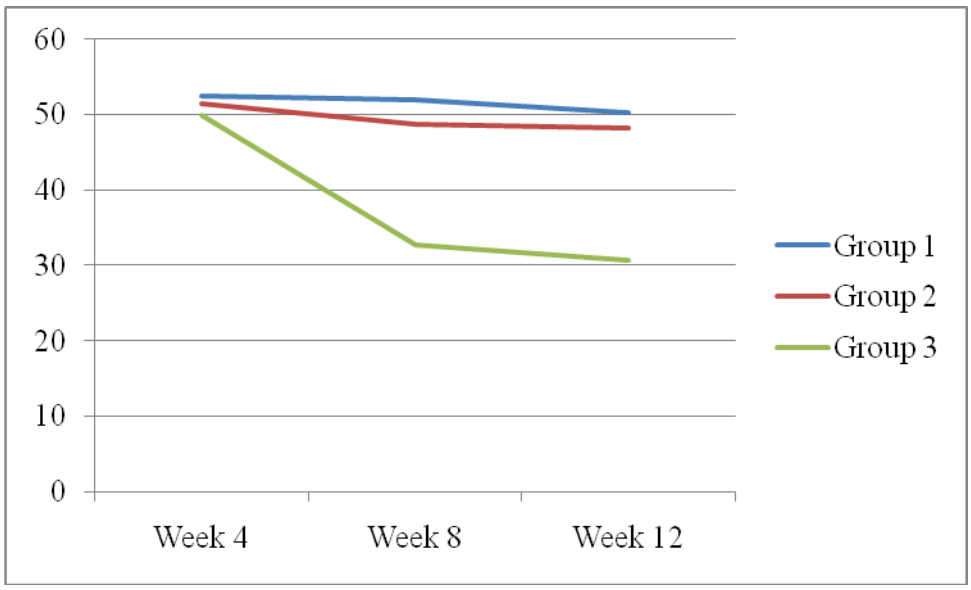

Figure 13. Group scores on SACQ academic subscale over the course of the first semester of college. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000.

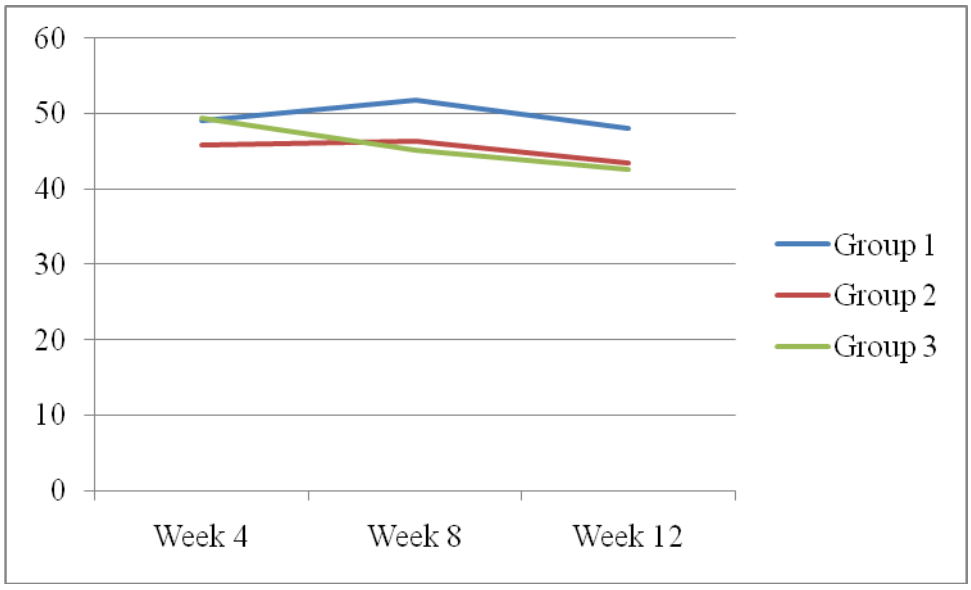

Figure 14. Group scores on SACQ personal/emotional subscale over the course of the first semester of college. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000.

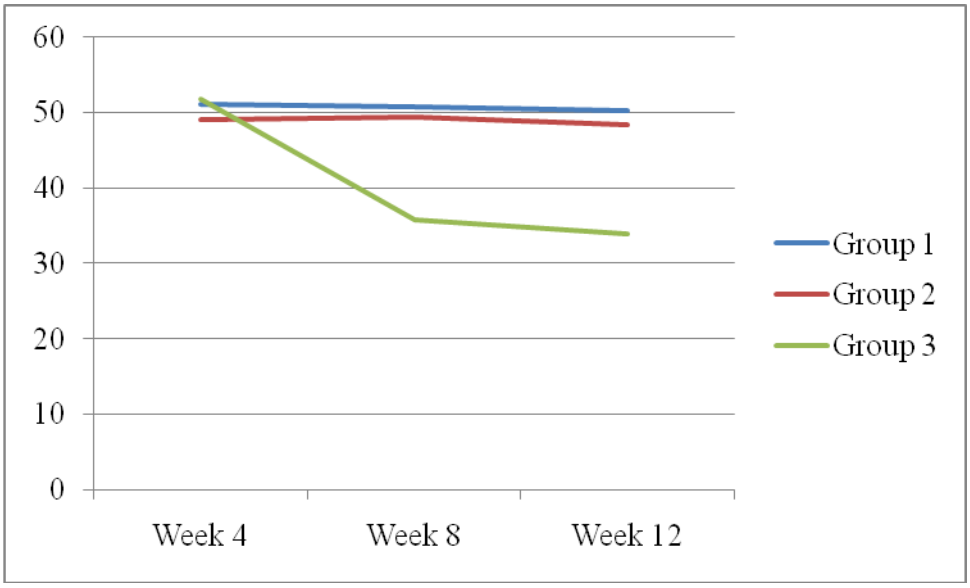

Figure 15. Group scores on SACQ social subscale over the course of the first semester of college. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000.

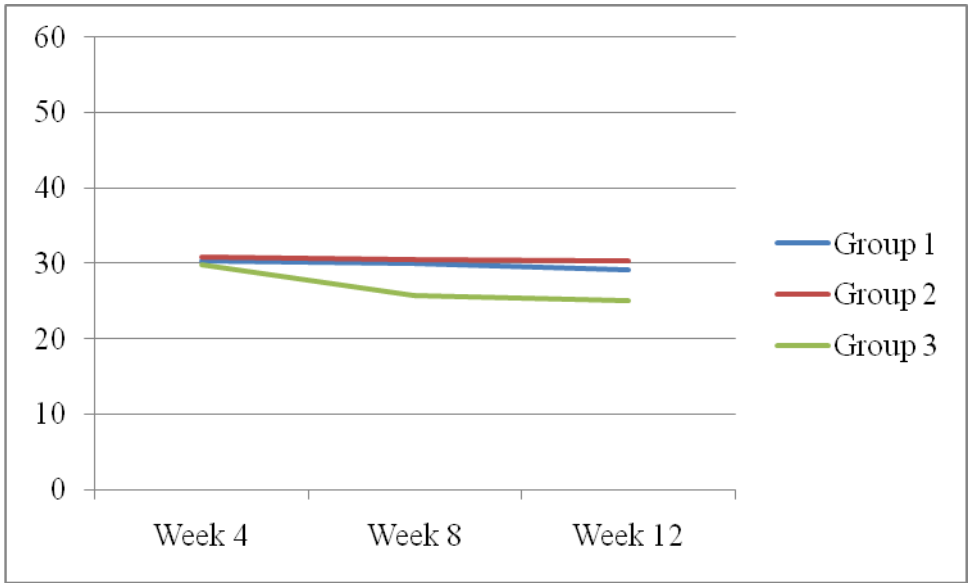

Figure 16. Group scores on SACQ institutional attachment subscale over the course of the first semester of college. Group 1: Non-athlete PSYC 1000; Group 2: Non-athlete no PSYC 1000; Group 3: Athlete PSYC 1000.

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